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HYDROA VACCINIFORME SEU AESTIVALE*

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In looking up the literature in association with the two cases of hydroa vacciniforme presented herein, we found that no extended review of the subject in English had been made for many years; we felt therefore that the following review was justified.

As is so frequently the case in dermatology, a number of names have been used in this field to designate the same or different forms of a single disease. Analysis of the cases of recurring summer eruption must lead one to the conclusion that we are dealing with a group of conditions of varying clinical form, all of them, however, having a common etiology, and differing only in the degree of reaction to the exciting factor. It seems feasible, then, to divide them into two groups, in one of which the reaction is insufficient to produce scar formation; this group is well named hydroa aestivale. In the second group, scar formation is the distinguishing feature, and the name hydroa vacciniforme is satisfactory.

Evidence of the close relationship between the two groups is easily found, as there are several important features common to both: (1) a tendency to appear in spring and summer, although in neither is the eruption necessarily strictly limited to these seasons; (2) the action of the sun's rays as an exciting factor; (3) the age at which the disease is usually seen. In one case reported, the disease existed for some years as hydroa vacciniforme, and later, after a remission of several years, assumed the aestival form. In a series of experiments in his case, Möller was able to produce at will, by varying the time of exposure to ultraviolet rays, lesions of different degrees of severity, varying

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from a mild erythema, through Hutchinson's prurigo, vesicle formation, vesicobullous hydroa and finally true hydroa vacciniforme.

For the purpose of this paper, we have attempted to select from the reported cases of recurrent summer eruption those which conform to the hydroa vacciniforme type, and to present the important clinical and experimental features of the disease.

The first observation was that of Bazin,[1] in 1862. He described a typical case, calling it hydroa vacciniforme. Sixteen years later Hutchinson[2] reported fourteen cases in which an eruption was produced by hot weather or exposure to the sun's rays, and called them prurigo aestavalis, seu prurigo adolescentium seu acne prurigo. In the light of our present knowledge, it appears that the cases represented several different diseases, and that one or two of them may have been hydroa vacciniforme. Hutchinson did not relate his group to Bazin's case, as he was unaware of the latter.

The next report came ten years later, when Jamieson,[3] likewise overlooking Bazin's work, presented two cases at a meeting of the British Medical Society, stating that they were allied to xeroderma pigmentosum. In the same year, Hutchinson[4] reported a typical case of hydroa vacciniforme as a recurrent summer eruption, "a form of xeroderma pigmentosum," and suggested the formation of a single group of diseases, the essential feature in all being a congenital susceptibility of the skin to the sun's rays. His "summer prurigo" constituted the mildest form; the case then reported was one of intermediate severity and xeroderma pigmentosum of the most severe type. At the time of his presentation he seemed not to have been aware of Jamieson's opinion, and these two observers independently related hydroa vacciniforme to xeroderma pigmentosum. Schultz,[5] in 1874, reported as pemphigus leprosus a case that was probably hydroa vacciniforme.

In 1889, Handford,[6] describing and picturing a typical case in the illustrated *Medical News*, properly classified it as hydroa vacciniforme of Bazin. From then on the disease was recognized with increasing frequency, although the cases were variously reported as hydroa vacciniforme, hydroa aestivale, summer prurigo, or recurrent summer eruption, while in some instances two or more of these titles were used, showing the tendency to regard them as essentially synonymous. Twenty-five years had elapsed, however, since Bazin's original description before the disease became accepted as an entity.

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1. Bazin: Leçons sur les affections génériques de la peau, Paris, 1862, p. 132.
2. Hutchinson: Rare Diseases of the Skin, 1878, pp. 126 and 133.
3. Jamieson: Lancet **2**:323, 1888.
4. Hutchinson: Clin. Soc. Trans., London **22**:80, 1889.
5. Schultz: Inaugural Dissertation, Greifswald, 1874, cited by Guenther: Deutsch. Arch. f. klin. Med. **105**:89, 1911.
6. Handford: Illustrated Medical News **5**:25, 1889.

Later some confusion arose through the description by Unna[7] of a group of cases which he designated hydroa puerorum. Many authors have looked on these cases as variants of hydroa vacciniforme, although others, following Unna's original idea, have felt that they more closely resemble dermatitis herpetiformis. Haase and Hirschler,[8] in 1908, in describing a case of Unna's hydroa puerorum, declare the latter to be an entity, and so well have they presented their evidence that it is difficult to regard the disease as a form of hydroa vacciniforme or of dermatitis herpetiformis.

We have been able to discover in the available literature seventy-eight cases which we feel can be considered as hydroa vacciniforme, and the following discussion of the disease has been based on the analysis of these cases. To these we add two cases.

REPORT OF CASES

CASE 1.—*History.*—A. M., an American, 31 years of age, a riveter, was seen in May, 1921. At the age of 4 years the patient had measles. About three months later, he developed some lesions on the pinnae of the ears. The lesions soon increased in number, but for some time remained localized on the ears. Later the cheeks and lips became symmetrically involved, and eventually other parts of the face. About ten years after the first outbreak, the backs of the hands became affected. At the age of 16 the corneas were involved, and the patient was seen at this time by Dr. James N. Hyde, who has a photograph of the patient in the seventh edition of his textbook.

The patient's mother was alive and well. His father died at the age of 72 from "kidney trouble." (The father once had an eruption in one popliteal space, which was aggravated by hot weather.) The patient had two brothers, one of whom was a twin, and neither of them had had any condition similar to the patient's. There was no history of any other skin disease in the family.

The eruption has always been at its height in the spring. Exposure to summer sun, however, produced an outbreak at any time. The patient, who was very intelligent, asserted that not only the sun's rays, but any sudden change in temperature produced the lesions, as did cold or sharp winds.

The lesions were characteristic of the hydroa vacciniforme type, beginning, after preliminary burning sensations, as vesicles. The latter ruptured in three to five days, leaving inflammatory bases surmounted by crusts. The crusts were dense and adherent and varied in color from yellowish to blackish. They fell off in about a month, leaving a typical varioliform scar. There was umbilication in many of the vesicles.

The disease is still active, new outbreaks occurring repeatedly after exposure, but it is somewhat less severe; and there have been no lesions on the cornea for many years.

Examination.—The skin of the face, ears and dorsal surfaces of the hands was covered with numerous pinhead to split pea-sized varioliform scars, the skin of the face resembling exactly that of a patient badly scarred from smallpox.

7. Unna: Monatschr. f. prakt. dermat. **9**:97, 1889.
8. Haase and Hirschler: Jour. Cutan. Dis. **26**:199, 1908.

The ears had a somewhat grisly appearance, as a result of the atrophic changes. The corneas were dotted with numerous opacities which interfered considerably with vision.

On the nose, cheeks, ears and on the anterior surface of the neck as far down as the clavicles were numerous fresh lesions in varying stages of development, some of them being early vesicles, others crusted lesions, while the oldest lesions showed only a slightly reddened fresh scar. The lower lip was studded with numerous lesions. The early vesicles were somewhat smaller than a split pea. The contents were clear as a rule, but they sometimes became purulent. The vesicle assumed a dark brown color at the center, sometimes became umbilicated, and eventually ruptured and became crusted. The crusts were often blood stained. Frequently there was considerable edema about the active lesions, giving the skin a glossy appearance where they were numerous.

Special Examination.—Examination of the patient's urine, which had never been noticed to be red, disclosed traces of hematoporphyrin spectroscopically, while all precipitin tests were strongly positive, showing the pigment to be present in excess of the normal amount. Biopsy was performed, the excised tissue including two vesicles in different stages of development, located on the ear. The Wassermann reaction was negative. Unfortunately, the patient was forced to leave the city before an examination of the blood or further urine examinations could be made. The general physical examination revealed nothing of interest.

Case 2.—*History.*—P. H., a schoolboy, 11 years of age, was seen in July, 1921. The previous year he had had a febrile condition, which was suspected of being typhoid fever, lasting from Thanksgiving until the end of December. Shortly after this, he developed an eruption over the buttocks, which was at first thought to be due to some medicine which he had taken. This practically disappeared in about three weeks, but it recurred immediately, and soon healed under local treatment. In March, 1921, he developed an eruption on the ears, and a short time later the face and neck became involved, and there were a few lesions on the arms. This eruption consisted of vesicles, some of which became pustular. These lesions ruptured, became crusted, and disappeared in a few weeks, leaving small scars. New lesions had appeared in crops from time to time since then, all running the same course. When seen in July, he had a number of papulovesicular and pustular lesions in the butterfly area of the face, on the ears, forearms and on the buttocks. On the backs of the hands there were a number of pinhead-sized vesicular lesions. The ears, face, back of neck, and backs of the hands showed a number of small white scars, which could scarcely be called vacciniform. The boy spent the remainder of the summer in Virginia, and by avoiding exposure to the sun, had been comparatively free from the eruption. He was seen again on March 15, 1922. The mother said that he had had no lesions during the winter, but that about a week before he had gone on a "hike" with his Boy Scout company, the day being both sunny and windy. On the following day the eruption appeared, preceded by itching and burning. It involved only the butterfly area of the face, the ears and backs of the hands. The eruption at this time consisted of pinhead-sized crusted lesions, which had evidently been vesicular. The crusts were of a clean honey colored appearance, and not adherent. The lesions did not seem sufficiently severe to result in scar formation. No umbilicated lesions had been seen at any time. There was slight burning and itching with the outbreaks, but not enough to cause scratching of the lesions, so the scarring could not be ascribed to trauma.

Examination.—The health of the boy, aside from the attack of questionable typhoid, had been very good. The tonsils and adenoids had been removed six years ago, but some tonsillar tissue still remained. The cervical glands had become enlarged at the time of his febrile attack, and had never involuted completely, so that he still showed some enlargement of the posterior cervical glands. His physical condition otherwise was excellent, as reported by his physician, Dr. George Musselman, after a thorough examination. The patient was an only child. His Wassermann reaction was negative. The urine showed no hematoporphyrin, and was negative otherwise. Examination of the blood showed: red blood cells, 4,120,000; white blood cells, 92,000; hemoglobin, 78 per cent. The differential count showed: polymorphonuclears, 68 per cent.; small mononuclears, 21 per cent.; large mononuclears, 6 per cent., and eosinophils, 5 per cent.

ETIOLOGY

Bazin, from his observation of the first case, regarded hydroa vacciniforme as of arthritic origin, since the patient was benefited by drinking alkaline waters at Bourbonne. The influence of light has been recognized by all observers, and while it is now definitely established that the actinic rays of the sun are the irritating element, there was a difference of opinion in earlier years. Graham [9] believed that the heat rays played an important part, because of the summer occurrence, and because he was unable to produce lesions artificially in his case by using an electric light, in which he stated chemical rays predominated.

Ehrmann [10] was probably the first author to study experimentally the effect of light on a patient suffering with hydroa vacciniforme. Using a Finsen light with a blue filter, he exposed parts of the skin normally covered by the clothes, and was able to produce typical lesions which resulted in scar formation. Ehrmann concluded that short actinic rays not absorbed by blue glass, but absorbed by red glass, acting on persons with an idiosyncrasy for these rays, produce the eruption. Because of the similarity to epidermolysis bullosa congenita, he proposed the name of epidermolysis photoactinica congenita. This conclusion has been confirmed several times by other writers, and leaves no doubt of the correctness of Ehrmann's view. Further evidence of origin from the chemical rays of the sun lies in the observation that in hydroa vacciniforme the lesions appear some hours after exposure to the sun's rays, and it is well known that this is always the case with reactions to the chemical rays, while the reaction to heat rays occurs almost immediately.

The question of the etiologic importance of other atmospheric factors than the actinic rays of the sun is unsettled. In a number of cases it has been stated that the wind was capable of exciting the eruption.

9. Graham: Jour. Cutan. Dis. **14**:41, 1896.
10. Ehrmann: Arch. f. Dermat. u. Syph. **76**:163, 1905.

In a few, the eruption is supposed to have been induced when the patient had not been outdoors, but had sat near an open window with a warm wind blowing on the face. Some writers are of the opinion that it is impossible to rule out exposure to the sun in these cases, and that all other factors can be discounted.

In the case of our first patient, however, we feel confident that he is correct in his observation that the wind or sudden changes in temperature can produce the eruption. Although this point cannot be regarded as settled, it seems certain that if other atmospheric factors can act as exciting agents, they play a minor part.

In the series of eighty cases, including our own, we find that the physician has recorded the exciting agent in fifty-two. In forty-two of these, or 80 per cent., the sun's rays alone were incriminated. In five both sun and wind, in three "summer weather," in one sun or sea air, and in one the wind alone were listed. It was noted that in those cases in which the eruption occurred in the winter, it was particularly likely to appear when the sun had been shining on the snow.

Attention was first attracted to the possible etiologic significance of hematoporphyrin in the urine in 1898, when McCall Anderson [11] reported two cases of hydroa vacciniforme in brothers. The first patient had noticed a Burgundy red color of the urine at every outbreak of the eruption. At first this color disappeared entirely between attacks, but later it persisted for some time after the eruption had cleared up. In his brother's case, the urine appeared never to resume the normal color between attacks. Dr. F. Harris, a chemist, who examined the urine in these cases, found that the red color was due to the presence of an ally of urohematoporphyrin, a protein and iron-free pigment. This particular form had been seen rarely, and was regarded as occupying chemically a position between hematoporphyrin and urohematoporphyrin.

Hematoporphyrin is a physiologic pigment in certain animals. A porphyrin regarded as identical is found normally in human urine, but only in traces. It has been observed in quantity in the urine in diseases of the liver, in which the administration of sulphonal, the use of alcohol, or lead poisoning may play a part, as well as in typhoid fever, tuberculosis, amyloidosis, and other diseases. It is closely related to the bile pigment bilirubin and urobilin. Urine containing hematoporphyrin may be only slightly colored, or it may be of a more or less deep red color.

When introduced into the body it manifests its poisonous action in part by photosensitization. Hausmann [12] found that white mice injected

11. Anderson: Brit. J. Dermat. **10**:1, 1898.
12. Hausmann: Biochem Ztschr. **30**:276, 1910.

with hematoporphyrin, and then exposed to bright light, soon died with characteristic symptoms, while control animals kept in the dark showed no symptoms. Black mice could not be sensitized. Perutz [13] fed rabbits increasing doses of sulphonal until hematoporphyrinuria was induced, and then exposed them to the rays of the quartz lamp for from three to five minutes. After a few hours redness, infiltration and vesicle formation occurred. This was followed by crust formation, and eventually scarring. Histologic examination disclosed a microscopic picture similar to that of hydroa vacciniforme. Control animals gave negative results. Meyer Betz [14] had a small quantity of hematoporphyrin injected into his arm, and an area the size of a dollar was then exposed to the Finsen lamp. The next day the site of the exposure was infiltrated, painful, and hemorrhagic; later it became crusted, and scar formation ensued. On the day following the injection he exposed himself to the sun's rays for a short time, and a severe edema of the face and hands developed which lasted several days. No vesicles were formed, but an intense pigmentation resulted. Linser [15] was able to produce hematoporphyrinuria at will in a patient suffering with hydroa vacciniforme by exposing the hand to roentgen rays or the quartz lamp.

In 1917, Perutz [16] reported a case of hydroa vacciniforme in which the urine showed porphyrinogen rather than hematoporphyrin. The former has been shown to be an intermediary substance in the formation of hematoporphyrin. He says that in another case of his hematoporphyrin and porphyrinogen alternated in their presence in the urine.

In the eighty cases examined, hematoporphyrin was found in fourteen, or 17.5 per cent., and in addition was present in a third case of Raedeli's, which he thought to be hydroa vacciniforme, although he had not been able to study it sufficiently to be certain. In only seven of the other cases was it stated that no hematoporphyrinuria was present. To the foregoing must also be added Perutz's case, in which porphyrinogen only was present, and another case in which it was stated that the urine was dark or black. Hematoporphyrin was also found in the stool in one case in which it was present in the urine.

With all of the foregoing evidence, one must conclude that in some cases at least the presence of hematoporphyrin serves as an explanation of the sensitization of the individual to the actinic rays, although we cannot explain the origin of the hematoporphyrinuria. Perutz believes that the light destroys the red blood cells, thus liberating hemo-

13. Perutz: Wien. klin. Wchnschr. **23**:122, 1910.
14. Meyer Betz: Deutsch. Arch. f. klin. med. **112**:476, 1913.
15. Linser: Arch. f. Dermat. u. Syph. **79**:251, 1906.
16. Perutz: Wien. klin. Wchnschr. **30**: 1201, 1917.

globin, which in turn gives rise to hematoporphyrin. Only careful experimental work can determine for us the importance of hematoporphyrinuria in these cases, and it is suggested that in every case seen in the future, search be made for hematoporphyrin and porphyrinogen in the urine. Spectroscopic examination is often necessary for its detection.

Other urinary findings were of little interest. Albumin was present in three cases, in one only at the time of cutaneous outbreaks. In Cappelli's [17] case, acetone and indican were present in addition to hematoporphyrin.

BLOOD

The findings in the blood have been investigated in few cases, and in these nothing of importance has been discovered. Eosinophilia has been recorded three times; leukocytosis with 84 per cent. of polymorphonuclear cells was found once. The Wassermann reaction has been negative in the five cases in which it has been investigated.

SEX

Hydroa vacciniforme has long been known to occur more frequently in males, and our figures show fifty-four cases in males and twenty-six in females, a ratio of practically two to one.

AGE

The disease usually begins in childhood, although a few cases have begun in young adult life, and in several questionable cases, not included in this series, the condition first appeared in middle life. In one of the latter group, a woman who had been taking sulphonal for some time, developed a vesicular eruption which was thought to be hydroa. In twelve cases, it began during the first year of life; in thirty-one, from the age of 2 to 5 inclusive; in twenty, from 6 to 10 inclusive; in ten, from the ages of 11 to 20; and in two, at the ages of 24 and 26, respectively. In five cases, the age at which the disease began was not recorded. The earliest beginning reported is at 1 month.

Graham [9] believed that the disease began later in life in females than in males, but we find the average age of onset is 6 years in females and 6.2 years in males.

The average age of the patients at the time their cases were reported was 15.7 years. In a number it had been noted that the eruption is less severe following the age of puberty, and in several cases the eruption had ceased at about the age of 20. In thirteen cases, it was still active in the third decade of life; in seven cases, in the

17. Cappelli: Gior. ital. d. mal. ven. **49**:283, 1914.

fourth; and in two cases, in the fifth. The average duration of the disease from the time of its beginning to the time when reported was 9.8 years.

HEREDITY

In five of the cases, the disease was found among brothers or sisters. Anderson's [11] two patients were brothers; Ehrmann reports a brother and sister affected; Gross [18] says that two sisters of his male patient had hydroa, while in one of White's [19] cases, a brother of the patient was probably suffering from the same condition. Artz and Hausmann [20] report two brothers with the disease, their parents being first cousins. This is the only instance of consanguinity recorded. Raedeli [21] reports a boy with hydroa vacciniforme, whose father probably had the same disease, hematoporphyrinuria being present in both cases.

In only nine of the other cases was the family history given, and in none of these were there other cases in the family, although in most of them there were a number of brothers and sisters. In our Case 1, a twin brother was unaffected, and a similar condition existed in one other case. It can probably be assumed that in most of the other cases in which the family history was not mentioned there were no other cases in the family, as they would hardly escape attention. Apparently, therefore, in about 10 per cent. of cases the familial element must be considered.

RACE

The disease has been observed in many countries, reports having come from France, England, America, Germany, Russia, Denmark, Scotland, South America, Italy and others. A dark complexion is apparently not absolutely protective, as there have been four or five cases reported from Italy and one from South America, while Moreira [22] reports one case developing in a patient one of whose parents was a mulatto. There are, however, no cases reported in the colored races.

INFLUENCE OF OTHER DISEASES

In five cases, the parents said that the disease followed shortly an attack of measles, one of them being our Case 1. In another case, vaccination for smallpox preceded the appearance of the eruption by a short time, and in our Case 2 a protracted febrile disease was present

18. Gross: Arch. f. Dermat. u. Syph. **105**:266, 1911.
19. White: Jour. Cutan. Dis. **16**:514, 1898.
20. Artz and Hausmann: Jour. Strahlentherap. **11**:1944, 1920.
21. Raedeli: Gior. ital. d. mal. ven. **46**:93, 1911.
22. Moreira: Brit. J. Dermat. **7**:175, 1895.

just before the cutaneous disorder appeared. In the rather frequent association with measles, one finds room for speculation, but as hydroa vacciniforme is likely to begin at the period when measles is commonly seen, this may have to be disregarded.

GENERAL CONDITION OF PATIENTS

The patients affected with hydroa vacciniforme do not appear to suffer any chronic ill effects systemically, and conversely, the disease appears to occur in persons of average health. In twenty-four of the eighty cases, note was made of the patient's general health. Of these, sixteen were in good health, three were "delicate," one had chronic bronchitis and frequent colds, in one splenomegaly was associated with ascites, ending fatally, while in three cases in Italians, the patients were probably tuberculous. This latter finding is of interest, as tuberculosis may give rise to hematoporphyrinuria. In one case the patient was congenitally syphilitic.

CLINICAL PICTURE

Season.—Hydroa vacciniforme is chiefly a disease of the spring and summer months. In practically all cases, the eruption is confined to or at its height during these seasons, although in White's [19] two cases of hydroa vacciniforme of the bullous type, the eruption was much worse in winter. March and April are the chief months for the onset of the annual attacks, with recurrences during the spring and summer months, or sometimes through the fall and winter. August and September are usually the latest months in which any considerable eruption is present. The reasons for this seasonal occurrence are obvious. During these months the luminous intensity of the sun's rays are greatest. Pautrier [23] suggests as additional factors the diminished amount of pigment in the skin after the passing of winter and the theory that the air in the spring, washed by the frequent rains, contains few dust particles to filter the sun's rays.

In the series of eighty cases, the seasonal occurrence was noted in seventy. In twenty-seven the disease was said to be apparent only in the summer, in six during the spring, and in twenty-two during spring and summer. In thirteen it was present during the winter as well, and in the two mentioned before, during the winter only. In the majority of the cases in which it is said to occur in the summer, the term is probably used loosely to include both spring and summer.

Distribution of Eruption.—The exposed parts are, of course, those chiefly involved, but it should be understood that the predilection for these parts exists only because they are exposed to the light. It is probable that in affected persons the eruption might occur on any

23. Pautrier: Bull. soc franç. de dermat. et syph. **24**:528, 1913.

part of the cutaneous surface exposed to sufficiently intense sunlight. This has been demonstrated repeatedly, both clinically and experimentally. The distribution as recorded in seventy-four of the eighty cases is given in Table 1.

The parts affected most frequently are: (1) the ears, (2) the face, especially the nose and the flush portions of the cheeks, and (3) the dorsal surfaces of the hands. The palms were involved in only one case. In the two cases in which the face was spared, it was said that this was due to protection of the part from the sun's rays.

An interesting involvement is that of the cornea. This was present in nine cases; those of Schultz,[24] Ledermann,[25] Moller,[26] Halberstaedter,[27] Scholz,[28] Kreibich,[29] Plöger,[30] Gunther [31] and our Case 1. In many of these patients, it was noted that the vision had been affected

TABLE 1.—Distribution of Eruption in Seventy-Four Cases

Face and ears only	4
Face, ears and hands	31
Face, ears, hands, forearms	11
Face, ears, hands (forearms also in some), feet (legs also in some)	14
Face, ears, hands, arms, trunk	3
Face, ears, arms, legs, trunk	3
Face, legs, buttocks	1
Face, hands, feet, buttocks	2
Ears and hands (face spared)	2
Extremities alone	2
Face, arms, legs, trunk (all parts except palms and soles more or less involved)	1

to some extent, and in one instance the patient had become hunchbacked because his photophobia forced him to walk with the head bent forward.

The mucous membranes of the mouth have not been exempt, as they were affected in two cases, and the tongue in one.

The nail plates or nail bed has shown lesions in three cases, those of Schultz,[24] Ehrmann,[10] and Arzt and Hausmann.[20]

Character of Eruption.—Although the vacciniform type of eruption is the characteristic form, we find several varieties when we consider all the cases of scar producing hydroa.

24. Schultz, cited by Gunther: Deutsch. Arch. f. klin. med. **105**:89, 1911.
25. Ledermann: Dermat. Ztschr. **6**:368, 1899.
26. Moller: Bibliotheca Medica Stuttgart **8**:1900.
27. Halberstaedter: Arch. f. Dermat. u. Syph. **79**:465, 1906.
28. Scholz: Arch. f. Dermat. u. Syph. **85**:95, 1907.
29. Kreibich: Wien. klin. Wchnschr. **42**:1286, 1907.
30. Plöger: Artzl. Verein München. **5**:28, 1910; abstr. München. med. Wchnschr. **57**:1475, 1910.
31. Gunther: Deutsch. Arch. f. klin. Med. **105**:89 and 130, 1911.

In the vacciniform type, erythematous lesions develop first, and on these appear transparent vesicles of a herpetiform character. At times these begin as hard nodules, which increase peripherally and gradually rise above the level of the skin. They may be single or more or less grouped. They vary in size from that of a pinhead to that of a pea, but through coalescence they may form bullae. These lesions, if small and superficial, may dry up in a day or two, leaving a thin crust, or may rupture and leave a thicker yellowish crust. The larger and more deeply seated lesions have at first a clear content, which may later become purulent or brownish. The center sinks in, and a brownish or blackish crust, which gradually enlarges peripherally, forms. At this stage the lesion resembles closely a vaccination pustule, and like the latter, does not collapse when punctured, as dissepiments give it a multilocular character. In this type, the crust may not be shed for several weeks. The lesions as a rule have a reddish areola.

Variations from the characteristic eruption may be of three types. In the first of these the eruption is of a mild character. The lesions are papulovesicular, fairly superficial, and never of the umbilicated type. The duration of the individual lesion is short. In spite of this, and without the aid of trauma or secondary infection, scarring is produced. Our Case 2 is an example of this form. These cases form a connecting link between the nonscarring hydroa aestivale and the vacciniform variety.

The second group comprises those cases in which the lesions, covered with a thick yellowish crust, assume an impetiginous form. In several instances this impetiginization has masked the essential picture, leading to error in diagnosis for a time.

In the third form, the eruption is of a severe bullous variety. In many of the vacciniform cases, some bullae are present, but White [19] has recorded two cases, and Constantin [32] a third, in which the lesions were of great size. White had some doubt as to the identity of his cases, especially as they occurred during the winter months; but Constantin found characteristic vacciniform lesions associated with the enormous bullae in his patient, and the histologic picture conformed to that of hydroa vacciniforme.

In seventy-four cases in which the character of the eruption was stated, we find the usual vacciniform type in fifty-three, a vacciniform and bullous type in five, a vacciniform and impetiginous type in two, a pure impetiginous type in two, a papulovesicular type in six, a vesicopustular type in two, an abortive pustular type in one and a bullous type in three.

In only one case was any degree of complication in the cutaneous picture noted, pyoderma and vegetations occurring. An interesting

32. Constantin: Ann. de dermat. et syph. **6**:927, 1905.

observation in Capelli's [17] case was the development of hypertrichosis in all parts affected by the eruption. In another case hypertrichosis was noted, although it was not stated that it had developed with or in the sites of the eruption. A third author remarks that his patient had an abundant growth of hair.

That the formation of scars does not protect against the eruption is proved by the observation of new lesions developing in scars resulting from previous attacks.

The character of the scar formation depends, of course, on the type of the eruption. In seventy-five cases the descriptions in Table 2 were given.

Local Symptoms.—The outbreak is often preceded by sensations of burning or fulness in the affected parts. After the eruption is once established, the patient may suffer itching and occasionally pain, but frequently does not complain of any symptoms.

TABLE 2.—CHARACTER OF SCARS IN SEVENTY-FIVE CASES

Vacciniform or varioliform scar	39
Deforming scar formation	5
Shallow scars	2
Large, smooth glossy scars	2
Minute scars	4
Scarring (no particular type described)	23

In this series, itching or burning or both were noted in twenty-five patients, itching and pain in four and pain alone in one. It is to be assumed that in many of the remainder these symptoms were present, but not mentioned.

General Symptoms.—In a number of cases, the attacks have been ushered in by some general symptoms, such as chills and nausea, at times with vomiting; malaise and slight temperature are the symptoms most frequently seen. Lymphadenopathy has been noted in only one case. One patient reported that her attacks were much more severe during the menstrual period.

HISTOPATHOLOGY

Bowen,[33] in 1894, was the first to describe the microscopic changes occurring in the affected tissue. He found the outer layers of stratum corneum unbroken, but the lower layers, together with the entire rete, were completely necrotic. The middle and lower layers of the rete were converted into a reticular tissue, forming a network filled with granular detritus and an occasional leukocyte. This network was everywhere necrotic. At the border of the rete and corium, the net-

33. Bowen: J. Cutan. Dis. **12**:89, 1894.

work ceased, but the necrosis extended downward beneath the vesicle through the entire corium. The connective tissue cells had in great part lost their staining properties. The fibers were broken up and forced apart, with granules and detritus contained in the interstices. In the papillary region were seen enlarged necrotic blood vessels filled with blood cells, often with free hemorrhage into the necrotic tissue in their neighborhood. The necrosis ceased quite abruptly at the sides and base of the lesion. The epidermis adjacent to the necrotic portion was slightly increased in thickness. The corium about the necrotic tissue was filled for a considerable distance with small round cells.

Study of an early lesion, in which was found a vesicle in the middle layers of the rete, led Bowen to outline the pathologic process as follows: Inflammation in the epidermis and upper part of the corium, soon followed by vesicle formation in the rete. After this necrosis of the epidermis and underlying corium takes place, the necrotic corium, with its dilated and necrotic vessels and hemorrhagic foci shows through the vesicular epidermis, thus producing the dark red to violet points which are seen objectively.

In 1896, Mibelli [34] made an exhaustive histologic investigation, and recorded certain changes not enumerated in the foregoing. He noted that the stratum granulosum was usually reduced to a single layer of cells. The vesicular cavity was traversed by slender columns of flattened rete cells which served to divide it into a number of parts. Some of these ran from top to bottom of the cavity, while others had one end free. The cells comprising these chains could be seen to be continuous with the intact epithelium about the vesicle, with the epithelium of some hair follicle, or with the epithelial cells at the base of the vesicles which had not yet been destroyed. These columns themselves become invaded and broken up by the serofibrinous exudate, and the cells become hydropic, or undergo Leloir's alteration cavitaire.

Mibelli noted that the changes in the rete did not result from liquefaction or coagulation necrosis of the cellular protoplasm, but that they were due to dilatation of the intraspinous spaces and compression of the epithelium, the latter acting so rapidly that the cellular elements do not have time to undergo any degeneration other than considerable flattening. Only in places in which small masses of cells have resisted this pressure is there any alteration cavitaire.

In the corium he found no plasma, mast or other pathologic forms of connective tissue cells, the infiltrate consisting of lymphocytes and numerous fusiform cells. The sweat glands were not destroyed, but were surrounded and pressed by the cellular infiltrate. In the papillary portion the elastic tissue was diminished, and the collagenous fibers

34. Mibelli: Trans. Third Internatl. Congress Dermat. London, 1896, p. 924.

paler, fragmented, with little affinity for stains. The collagenous bundles and elastic fibers in the reticular derma and hypoderm were spared. Mibelli also noted the great changes in the blood vessels.

In more advanced lesions he found that the division of the vesicles into compartments had been lost, and the lesion was filled with a uniform granular mass. Mibelli was struck by the fact that the elastic fibers were so little affected in the intense necrotic process, and recalls that Dubreuilh has noted the same condition in acne necrotica, a condition which histologically closely resembles hydroa vacciniforme.

As the result of his study, he feels that the process is probably due to the vasodilatation which takes place in the superficial network of vessels.

Eddowes [35] found that the process was an edematous necrogenic inflammation beginning high in the corium and involving the epidermis secondarily.

Wolters [36] compared the histologic changes in a typical vacciniform lesion and in one of the milder type. He found that while in the former the vesicle had the papillary layer of the derma as its floor, in the latter the rete was undisturbed, the vesicle having as its roof only the outer layers of the epidermis, including the stratum granulosum.

Constantin,[32] Malinowski,[37] Moller [26] and others have given histologic reports, but add nothing not disclosed in the foregoing.

We removed from the ear a piece of skin containing two lesions, one in an early, and the other in a late, necrotic stage. The findings were largely a duplication of those already given, but they will be set down briefly.

Epidermis.—The stratum corneum was practically intact, but somewhat thinner. The stratum lucidum was unusually well developed in the epidermis adjoining the necrosis, but was not apparent in the affected parts. The stratum granulosum was three or four layers thick in the adjoining epidermis, and reduced to a single layer over the necrotic area. The stratum mucosum and stratum germinativum were completely destroyed by necrosis, and replaced by a mass of granular detritus. There was a sharp line of demarcation between the epidermis of the affected and unaffected portions. The epidermis not affected by the necrosis showed slight acanthosis.

Derma.—At the center of the lesion, the corium was replaced in the papillary layer by an extension of the necrotic mass seen in the epidermis. At the margins of the lesion some collagenous bundles, swollen and fragmented, and some connective tissue nuclei were seen, showing

35. Eddowes: Brit. J. Dermat. **14**:225, 1902.
36. Wolters: Dermat. Ztschr. **14**:263, 1907.
37. Malinowski: Monatschr. f. prakt. dermat. **41**:293, 1905.

the process to be most advanced at the center. The degree of involvement of the collagen gradually decreased so that in the lower part of the reticular layer and in the hypoderm it was practically unaffected.

Elastic Tissue.—This was destroyed at the center of the lesion in the papillary region, and was fragmented and reduced beyond this, but it was relatively less affected than the collagen bundles.

Blood Vessels.—These were completely destroyed in the upper papillary portion, and much free hemorrhage was seen. In the lower papillary and upper part of the reticular layer the vessels were dilated, tortuous and distended with red blood cells.

Lymphatics.—The lymph spaces were greatly dilated.

The necrotic mass was made up of fibrin, lymphocytes and débris, with a few flattened connective tissue nuclei in the peripheral portions. The cellular infiltrate, which consisted of small lymphocytes and a few cells, was only moderate in density in the necrosed and necrosing areas, but was so dense that it had nearly obliterated the collagenous tissue surrounding the degenerating area.

No adnexa were seen in any part of the tissue.

TREATMENT

The list of applications used in an attempt to protect the skin is long, but none of them seems to have had much effect. Ointments containing quinin have been most widely used, and esculin, which is credited with the power of absorbing actinic rays, has been tried on two occasions, in one with some success.

Eddowes,[35] who believed that the intense edema was responsible for the necrosis, advocated early puncturing of the vesicles in order to reduce the tension and thus lessen the amount of destruction.

Parana [38] has recently reported a case of hydroa aestivale occurring in a patient with incipient tuberculosis and troubled with profuse menstruation. In view of the menstrual history, ovarian extract was used. This had no effect on the menses, but caused the eruption to disappear in two weeks, in spite of sunny days. It returned when the extract was omitted, and disappeared again under its use.

SUMMARY

1. In a review of eighty cases of hydroa vacciniforme, the sun's rays alone were listed as the exciting factor in 80 per cent., while in the remainder of the cases there were additional factors, usually the wind.

2. Hematoporphyrinuria was present in 17.5 per cent. of the cases, but was recorded as being absent in only seven of the others. Thus it

38. Parana: Ceska dermat. **2**:44, 1921.

must be assumed to be present in a considerable proportion, and perhaps in the majority of cases. The exact significance of the presence of hematoporphyrin in the urine of these patients is not known, although it must be conceded that the relationship between hematoporphyrinuria and hydroa vacciniforme is a very direct one.

3. The disease occurs in a ratio of two females to one male.

4. Hydroa vacciniforme usually begins in early childhood, although a few cases have begun in young adult life. As a rule, the eruption ceases or becomes ameliorated at puberty, but it may persist for some years following puberty.

5. Heredity apparently plays some part, as more than one member of the family was affected in five instances.

6. The eruption usually appears only in the spring and summer, but it was present during the winter also in nearly 20 per cent. of the cases.

7. The exposed parts alone are involved ordinarily, but covered parts are occasionally affected to some extent.

8. The resultant scarring may vary from a very superficial type to a severe disfiguring form.

9. Subjective symptoms are usually mild, but itching and burning sensations are occasionally troublesome.

10. Prodromal symptoms of a general character occasionally precede the eruptive attacks.

11. Treatment has been of little avail, although ointments containing quinin or esculin have been reported as of value in some cases.

DISCUSSION

DR. HARVEY P. TOWLE, Boston: As Dr. Gilchrist has said, the field opened up is enormous. The sensitization of the skin to sunlight is an old story. It is known to all of you that years ago when the roentgen ray was in its infancy many attempts were made to increase the power of its rays. One well-known New Yorker advocated the use of quinin internally to give greater sensitization to the skin. He was so far justified in that quinin is known to be light absorbing. It absorbs light and then not only gives forth the amount of light it absorbs, but, apparently, a little more. Eosin has the same property. Fluorescein has it to a marked degree. Crude coal tar has it, and I would warn you against using crude coal tar on exposed parts and then exposing the patient to sunlight. I have had some annoying experiences of this kind. I am a little surprised at the author's advocating the use of quinin, as it is known to be fluorescent. This was discovered by a man working on the bactericidal effect of quinin on malaria. In the dark there was no effect, but he noticed that in the tubes in the window it killed the organism.

I have found in the treatment of this disease that protection against marked reddening is sometimes quite helpful. It is palliative but not, of course, curative. By combining a cream made of ichthyol, zinc oxid and petrolatum and smearing it on before going out into the sunlight, the severity of the disorder can, in a large measure, be mitigated.

DR. CHARLES M. WILLIAMS, New York: I should like to ask why a red umbrella is better than a black one? The object is to get rid of the actinic ray. Why should a woman not use black veils instead of red?

Probably pigment in the skin does not protect because two of the cases reported were from Italy. We think of the Italians as dark, but there is such a large admixture of light races there, dating back at least to the invasion of the Lombards and the Goths, that unless the statement was made that the patient was dark it does not carry any weight.

DR. LLOYD W. KETRON, Baltimore: I think that there must be a variety of these cases in which factors other than the light are concerned in the production of the cutaneous reaction. One patient whom I studied had attacks of a severe bullous eruption on exposed parts during the spring, fall and winter, but was usually entirely free from the eruption during the hot summer months. He could prevent the attacks by remaining indoors or protecting his neck, face and hands from the sunlight. Very soon after a severe attack in December, I attempted to reproduce the eruption after exposure to ultraviolet light and sunlight with and without the addition of a strong draft of air from an electric fan. His reaction to this was no more severe than the control and the resulting erythema healed in the usual time.

DR. FRANCIS EUGENE SENEAR, Chicago: In reply to Dr. Towle, regarding the local application used, the reports in the literature show that therapeutic measures have been unsuccessful. A good many local applications have been employed. We listed about forty, taken from various case reports. Some had proved protective, others without value; some were effective in some cases and not in others.

Concerning red umbrellas: I presume this idea has arisen through the fact that red filters out the actinic rays and that blue will not filter them. The black umbrella, merely furnishing shade for the patient, would be equally effective.

I think Dr. Williams' point concerning a dark complexion is well taken. I do not recall that in the five cases reported from Italy in the literature it was stated that the patients were dark skinned. We have stated that one patient was blond and the other, not a brunette, but dark.

I do not think we will find hematoporphyrinuria in all cases, but where it occurs it may be present only during attacks. In the first case reported by Anderson, the patient had it only at the time of the outbreak; later it persisted for some time after the eruptive attacks. In the case of the brother, it was present constantly during the period of eruption and at other times. In three of the cases from Italy the patients were tuberculous, and since it has been shown that hematoporphyria can be produced by tuberculosis, it may be that these patients are only affected at certain times on this account.

With regard to the protection furnished by the glove mentioned by Dr. Ketron, that is not a certain prophylactic treatment, as in the cases in which the eruption has been present on the trunk as well as on the exposed parts, it has been shown that the clothing does not completely protect the body from the actinic rays, and the shoulders and particularly the buttocks are affected by the disorder.

PITYRIASIS ROSEA*

A FEW SIMPLE FACTS

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The diversity of impressions concerning this remarkable disease is rather amazing. Clinically, the condition is clear cut, what with the herald spot, the disseminated exanthem, the lack of enanthem, the frequency of itching, often very severe, the rarity of constitutional manifestations, the uniformity of the course and the rarity of recurrences. These compose a picture establishing the disease as a clinical entity beyond peradventure.

Undoubtedly, the malady is infectious; and, since the agent is unknown, it is difficult to state whether the infection is purely local or general. Favoring the hypothesis of a general infection, according to reports in the literature, is the occasional presence of constitutional symptoms such as fever, malaise and slight arthralgia. Against the theory of general infection is the absence of an enanthem. If it were not for this fact, in isolated cases it might be more justifiable to regard the disease as an acute eruptive fever, not unlike scarlatina or measles. But it may be stated here that the evidence against a generalized infection is not quite complete, for the herald spot might conceivably be the portal of entry, and the generalized eruption bear the same relation to this that the rash does to the throat in scarlet fever. Nor is this far fetched, judging from the analogy supplied by ringworm and the trichophytids.

The last statement might equally well apply to pityriasis rosea conceived as a local infection, whether of bacterial or fungous derivation. What further favors the external nature of the disease is the low ratio of general manifestations as contrasted with cases in which the patient complains of nothing but the eruption and itching. The absence of mucous membrane involvement is further negative evidence supporting the external nature of the disease.

A striking feature of the condition is the immunity conferred by one attack. Such immunity brings it more in line with the acute exanthems than with local infections; but recent investigations in the domain of fungus infections indicate that among these a certain number provoke at least a relative immunity, and it is not wholly without the bounds of likelihood that pityriasis rosea is a fungus infection determining such immunity.

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The foregoing reflections were stimulated by a criticism [1] which ran as follows: "One can hardly subscribe to the itching of pityriasis rosea as often very intense, or that bromides need to be prescribed for it. . . ." Highman says: "It occurs prevailingly in the spring and fall in an epidemic manner. Thus it is clearly infectious. . . . but this is not clear from the fact that it is of seasonal occurrence, 'in an epidemic manner.' The same thing is true of freckles in summer at the seaside resorts."

The critic's analogy to freckles is excellent satire and clearly points out looseness of sequence on the part of the writer, which was due, however, in part, to the latter's belief that the simple facts concerning the disease were well enough known to justify a categorical statement. Such an assumption is always unjustifiable; and for this reason we analyzed a series of cases which entirely support the statements adversely criticized, and which seemed to bring out so many interesting clinical facts that the present paper may be acceptable on the grounds that the striking features of a well-known disease are vague even to many experts.

THE SOURCE OF THE MATERIAL

Of seventy-four cases available for study, in only fifty-two were the records sufficiently complete for analysis. Subsequent paragraphs will show the considerations that appeared pertinent to the matter at hand, for it is our design mainly to indicate that the disease is epidemic, and that aside from its characteristic eruption, one of its outstanding features is itching, frequently severe enough to warrant the use of sedatives. It is further characteristic of the disease that the annual epidemic curve reaches two peaks, although sporadic cases are encountered throughout the year, but rarely in July. The cases in question extend from November, 1909, to March, 1922, and during this entire period in our series not one has been observed in the month of July, which serves as a dividing line between the fall epidemic, which has a low fastigium, and the winter and early spring epidemic, which reaches its high point in March.

LITERATURE

Itching.—According to Brocq,[2] there is rarely intense pruritus, although there may be severe and rebellious itching in the neurotic and in persons with alimentary intoxication. Koposi, Riecke, Sutton, Török, I. Bloch and Joseph, in their various textbooks, deny itching. Darier [3] says that the eruption is slightly pruriginous, a view shared by

1. Dermatology the Essentials of Cutaneous Medicine, by Walter James Highman, Book Notices, J. A. M. A. **76**:1190 (April 23) 1921.
2. Brocq, L.: Traite Elementaire de Dermatologie Pratique **11**:318.
3. Darier, J.: Précis de Dermatologie, Paris, 1909, p. 81.

Hartzell, who states, in his textbook, that some degree of itching is present in most cases, while occasionally it is severe enough to cause distress; a view also expressed by Ormsby in his textbook. E. Lesser [4] says the itching is usually marked, and Finger [5] concurs. Thibierge [6] states that slight itching and warmth may be present, and that it is severe in subjects predisposed to itching, in toxic persons, in those suffering from alcoholism or uremia, and in neuropathic patients. Nicolas [7] is of the opinion that the degree of itching is individual rather than an inherent feature of the disease.

Other Clinical Features.—All authors agree that, characteristically, the disease begins with an isolated patch, universally called the herald spot, which pursues a solitary existence for a few days, or weeks, and which is followed by a stage of dissemination, as a rule lasting no longer than two months. At times, the duration is six months; and Thiebierge quotes a case of Hallopeau's alleged to have lasted four years. A detailed description of the lesions requires no space in this article, as their appearance is perfectly well known to everyone. The disseminated lesions have the same attributes as the herald spot, and the only points worth recording are that sometimes there is vesiculation, sometimes some of the lesions are papular, and sometimes seborrhea is simulated. Sabouraud [8] does not consider the disease an entity, but the principal type of a group which Brocq called the seborrheids.

For the most part, the condition is not associated with systemic manifestations, but Fox [9] hints at its relationship to multiform erythema, while Alderson [10] endeavors to find a relationship between the disease and nervous or internal derangements. In other words, its relationship to other skin diseases seems to have afforded a great deal of speculation.

Etiology.—To say that anything definite is known as to the cause of the disease would be to state something that the literature does not reflect. About half the writers think that it is an internal disease, and the rest that it is external. Those who consider it internal ally it to disturbances of the alimentary tract or nervous system, primarily. With slightly more reason, it is regarded by some as exanthematous. It is particularly the French authors who champion its internal causation.

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4. Lesser, E.: Lehrbuch der Hautkrankheiten, Leipzig, 1904, p. 356.
5. Finger, E.: Die Hautkrankheiten, Leipzig, 1907, p. 366.
6. Thibierge, G.: La Pratique Dermatologique **111**:894, 1902.
7. Nicolas, L. J.: Du Pityriasis Rosè, etc., Thèse de Paris, 1880, No. 272.
8. Sabouraud, R.: Pityriasis et Alopecies Pelliculaires, Paris, 1904, pp. 54-55.
9. Fox, G. H.: A Broader View of Pityriasis Rosea, J. A. M. A. **59**:493-497 (Aug. 17) 1912.
10. Alderson, H. E.: Pityriasis Rosea: Clinical Observations, Jour. Cutan. Dis., May, 1914.

The German authors, notably Hebra, regarded it as external and parasitic. In the older days, such writers as Chapard, Vidal, Biett and Cazenave devoted a great deal of attention to differentiating the disease from other forms of pityriasis. It is unnecessary to pursue this phase of the subject, as the artificialities involved have long since ceased to occupy dermatologists; but it is noteworthy to recall some of Vidal's beliefs as recorded by Chapard.[11] Vidal found no specific micro-organisms in the scales of pityriasis. He believed that its infectious origin could be excluded because of symmetry in distribution, and uniformity in the size and shape of the lesions.

In Sutton's textbook, Towle is quoted as finding it more common in women than in men, and more frequently in the fall than in any other season; while Hartzell in his textbook states that it is more common in males. Ormsby believes it to be more frequent in spring and fall than in any other seasons. To revert for a moment to the bacterial or fungous origin of the disease, Vidal, DuBois and M. Oppenheim have all described different types of micro-organisms.

Summary of the Literature.—The following facts stand out in the literature:

1. Pityriasis rosea is an acute disease starting in a definite manner and running a characteristic course.

2. Its causation is regarded by some as due to a parasite operating externally and by others as due to an internal agent whether infectious or metabolic.

3. Its incidence, as to sex, season and certain symptoms, is variously described.

ANALYSIS OF AUTHORS' CASES

Sex.—Fifty-two cases were analyzed. Of these, thirty were in females and twenty-two in males.

Age.—Two were in children of 4 years, one in a child of 7, one in a child of 10, six between the ages of 11 and 20, thirteen between 21 and 30, twenty-one between 31 and 40, three between 41 and 50, three between 51 and 60, and one at the age of 62. In one instance, the age was not recorded. It is apparent, therefore, that two thirds of the cases occur between the twenty-first and the fortieth year, or during the prime of life. In this series, the disease is as exceptional in the fifth and sixth decades as in the first. What inferences are to be drawn from this, it is difficult to state. It evidently occurs in the period of maximum human activity in all physical and mental departments of life. It can hardly be assumed to be a matter of undue exposure, as in traveling, for, as noted, it is far more frequent among women than among men.

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11. Chapard, A.: La Roseole Squameuse, Thèse de Paris, 1885.

Season.—Eight cases occurred in January, six in February, thirteen in March, four in April, two in May, one in June, none in July, one in August, two in September, four in October, four in November and seven in December. Dr. Howard Fox has kindly turned over to us a report of a series of ninety-one cases. In this series, nine occurred in January, seventeen in February, eight in March, six in April, eight in May, seven in June, three in July, six in August, five in September, six in October, five in November and eleven in December. In our cases combined, seventeen occurred in January, twenty-three in February, twenty-one in March, eight in April, ten in May, eight in June, three in July, seven in August, seven in September, ten in October, nine in November and eighteen in December.

Dr. Fox's more extensive observations virtually paralleled ours, but the composite curve of the two indicates a peak in the four winter months from December to March, with the apex in February, and only three cases all told in July.

Itching.—In seven cases, there was no itching; in nineteen it was mild; in eleven moderately severe, and in fifteen so severe as to be the outstanding feature of the complaint. In four of the last group, sedatives had to be employed, and in one of these, opium. Thus, in 50 per cent. of the patients, the itching was absent or only mild; while in nearly 29 per cent., it was severe, and in the balance moderately severe.

It cannot be stated that, in a single instance in which there was itching, there was any reason to believe that the patient was a malingerer, or even exaggerated the discomfort. It is extremely unlikely that a syphilitic roseola or parapsoriasis in the same people would have itched. This disposes of the contention that pruritus is due to the individual and not to the disease, unless we wish to apply the principles of Christian science, when it is convenient to force a theory. In short, except in 15 per cent. of the cases, itching was present in some degree. So much for the prevailing impression that the malady is not characterized by itching.

Character of the Eruption.—The eruption in all cases was classic, with evidence of the herald spot and characteristic disseminated rash. Any cases not obviously pityriasis rosea were not included in this analysis. The smaller lesions were reproductions in aspect of the primary patch. All of the ordinary objective findings, which it would be redundant to enumerate, were present.

Incubation Period.—In eighteen cases, the patient could not state the length of time that elapsed between the appearance of the first lesion and the dissemination of the rash. In four instances, it was stated that the entire eruption appeared without the herald lesion; but evidences

of such a lesion were present, and probably the patient inaccurately observed the onset. Of the remainder, the incubation period was three days in one, four in one, one week in four, ten days in six, two weeks in nine, eighteen days in two, three weeks in one, five weeks in four, six weeks in two, and twelve weeks in one. Thus, in nineteen of the thirty patients who observed themselves closely, the incubation period was from seven to fourteen days, and rarely longer than five weeks.

Course.—Of the total series of patients, eighteen appeared only once, and thirty-four submitted to observation until they were well. Of these, four recovered in one week, eight in two, five in three, nine in four, six in five and two in six weeks. The term "well" signifies that there were no subjective or objective symptoms left of pityriasis rosea; but in several instances the skin seemed excessively dry, possibly because of the type of medication employed. Emollient ointments controlled this feature. In the acute stage of the disease, the use of creams usually provokes acute dermatitis, regardless of the substances incorporated in them. For this reason, dusting powders and lotions containing salicylic acid or menthol or both in low concentration were used. The object of local therapy was purely to relieve the itching and to hasten exfoliation with mild keratolytics. No internal medication was employed excepting sedatives in four cases. These were used because the patients were sleepless. In general, mentholated zinc sterate powder controlled even severe itching sufficiently to insure adequate rest during the first two weeks, when pruritis is at its height.

Thus, the average duration of cases in which treatment is given is between two and four weeks, a few disappearing in one week, a few more requiring up to six weeks. There are no observations to offer on the time, in untreated patients, required for spontaneous recovery. It may be assumed, however, that of the eighteen patients seen only once, those who were not examined in consultation must have had short mild affections, unless failure to return indicated dissatisfaction with their physician. In that event, entirely different inferences would have to be drawn as to the duration.

Site of Herald Spot.—An analysis of the areas at which the herald spot occurs is interesting. Observations could be made in thirty five cases of the series. Five occurred on the neck, eight on the upper extremity (shoulder four, arm three, forearm one); thorax thirteen (axilla two, breast four, chest seven); abdomen four; lower extremity five (buttocks two, thigh one, knee two). Thus, thirty of the thirty-five occurred above the level of the great trochanters, and twenty-six of these above the abdomen. Excluding those on the neck, forearm and knee, it will be seen that the origin of the disease is in areas in which the clothes touch the body most snugly, and this, too, holds true of

the eruption in its general distribution, for it rarely is found below the knee or above the line of the collar.

COMPARISON WITH CHAPARD'S TEN CASES

Chapard analyzed a short series consisting of fifteen cases, ten of which were in women. He found no itching in three, slight itching in six, moderate in two, and severe in four, or about the same proportions as the authors' series reveal.

The months in which his cases occurred were from February to June, inclusive, with one case in November. In April, May and June, there were four cases each. In other words, the high point in France seems to be about three months later in the year than in New York, a fact also noted by Moingeard,[6] who observed thirty-five of fifty-six cases between April and June.

COMPARISON WITH HOWARD FOX'S CASES

In Fox's series, no notation was made of pruritus in ten cases. Of the eighty remaining, there was none in forty-two, mild in thirteen, moderate in eleven and severe itching in sixteen, or in 20 per cent. of the patients. In one of Fox's cases, the disease occurred at the age of 17 months, in one at 20 months, in one each at the age of 8, 9 and 10 years. Fifteen cases occurred in the second decade, thirty-five in the third, nine in the fourth and ten in the fifth. He observed none after the age of 50. He, too, found the highest incidence between the twentieth and fortieth years.

The site of the herald patch was on the face in two cases, neck in four, upper extremity in fourteen (shoulder one, scapula three, arm two, forearm seven, wrist one); thorax in nine (chest seven, axilla two); abdomen in eight; back in three; and lower extremity in ten (thigh seven, leg three). Eighty per cent. occurred above the level of the great trochanters, 74 per cent. having been found where the clothing most closely wrapped the body.

In every respect, then, there was a striking similarity between our cases and Dr. Fox's. The widest divergence existed in sex distribution; for, in his series, forty-eight patients were men and thirty-three women, while in ours twenty-two were men and thirty women. Such discrepancies as exist may be referable to the personal equation, for he may have included cases we would have thrown out, or we may have excluded cases unwarrantedly according to his conception.

ETIOLOGIC RELATIONSHIP TO INTERNAL DISTURBANCES

In not one of the fifty-two cases was there a single symptom or sign of any general disturbance, as fever, malaise, chilliness, chills, alimentary affections, gross urinary changes, or any finding such as

accompanies even the mildest exanthems, such as German measles or Duke's disease, or the various toxic erythemas. In patients in whom the itching was severe enough to disturb sleep, there were evidences of the slight wear and tear accompanying transitory insomnia.

There was, thus, no more trace of associated general derangement than exists in other generalized eruptions. In fifty-two persons it is rather astonishing that the general picture should have been so neutral; for it is probable that if a similar number of apparently healthy persons were examined at random, at least a tenth of them would show signs of morbidity. The evidence points to its being a purely external disease. Barring the fact that any illness is the expression of an academic internal disturbance, pityriasis rosea must be classed as a disease of external origin.

We have a clear picture following a definite sequence. First, there is the herald spot, leading an isolated existence within time limits more stereotyped than those of the syphilitic chancre; second, there is a disseminated rash. It is fair to infer that the herald spot is either a focus of dissemination, bearing a relationship to the rash which is analogous to that of kerion to trichophytids, or it is a portal of entry, the relationship being analogous to that of the chancre to the syphilitic eruption. In either event, the disseminated eruption of pityriasis rosea could be due to the effect of a still undiscovered micro-organism or to its toxins. Which of these hypotheses is correct is not a subject for debate but for research.

Thus far the investigations have been unfruitful. In other words, methods of study are still inadequate. It would be unprofitable to enumerate the various, implicated, polysyllabic micro-organisms dotting the literature, and characterized by every sort of attribute except the essential one of being convincing. Nevertheless, the general features of the disease indicate its infectious origin too emphatically for denial.

It most commonly occurs in an epidemic manner when winter ends; namely, in March, in our climate, and a little later in Europe. It has a definite incubation period, and runs a definite course. At this point, it may be reiterated that recurrences are practically unknown, as though permanent immunity were conferred. Thus, we maintain that it is an infectious disease following definite, seasonal, epidemic laws.

The favorite season being one in which the clothing worn is heavy, and often too heavy for the outside temperature as spring approaches, it appears that increased surface moisture and temperature favor the development of the malady, even as the summer sun favors the development of freckles, which may be considered epidemic, though obviously not infectious, a distinction the critic alluded to earlier in the paper might ponder.

The diseases with which pityriasis rosea is clinically confounded are seborrhea, psoriasis, erythema multiforme and disseminated tinea. The first three of these are prone to recurrence. None have the herald spot, and all occur on areas which pityriasis rosea never reaches. At times, the aspect of individual lesions may furnish cause for confusion, but in their broader clinical aspects they no more resemble pityriasis rosea than lepra.

But pityriasis rosea and disseminated tinea do often look alike. At present, the demonstration of fungi must be considered the main point of differentiation, until we find a micro-organism consistently present in all cases of pityriasis rosea. That this will some day be accomplished is highly probable, although we have no convictions as to the nature of the organism.

CONCLUSIONS

1. Pityriasis rosea is a clinical entity running a definite and characteristic course.

2. It is presumably caused by an external infectious agent, and the disease occurs epidemically, prevailingly in March in this climate.

3. Aside from itching, which is often very severe, there are no subjective symptoms.

4. It has no relation to any other similar condition.

780 Madison Avenue.

DISCUSSION

Dr. H. H. Hazen, Washington: It seems to me that in Washington pityriasis rosea must be a little different from what it is in New York. We occasionally find that cases recur. One of my physician friends has had three attacks, and I know of other patients who have had two attacks. Recurrences are extremely rare, but they do occur. In the second place, we have had two cases with lesions of the mucous membrane.

The most striking thing, I think, is the relationship to the tonsils. We have been quite interested, in this connection, in pityriasis rosea for several years, and in every case we have the tonsils examined as carefully as possible. We have found just one case in a series of 150 or 200 with tonsils entirely enucleated in pityriasis rosea. On the other hand, in practically every case we have found some slight infection of the tonsils. My physician friend with each attack of pityriasis rosea has had a severe attack of tonsillitis. It seems rather striking to us that the patients who have no tonsils do not have pityriasis rosea, and those who do have pityriasis rosea almost invariably have some tonsillar infection. Apparently pityriasis rosea, in Washington at least, is not always of external origin.

Dr. William Thomas Corlett, Cleveland: I am much interested in Drs. Highman and Rulison's paper and agree with practically everything in it. A number of years ago I had under my observation a case in which the initial lesion on the trunk was followed by a scattered eruption; from a careful study of that case I have never regarded it as a localized infection, but an infection which appears as a localized lesion which in turn becomes more or less generalized over the body, disappearing in the order of its invasion and spread.

During a winter nine cases of the disease were admitted for investigation at Lakeside Hospital. An endeavor was made to find a micro-organism, if possible, and its causation. Failing in that, as has happened many times before, we endeavored to inoculate the disease to others not afflicted. Nine volunteers appeared, and we tried in various ways to communicate the disease, but with negative results.

With regard to itching, I think that depends on the individual. A slight dermatitis will cause itching in one patient and will not be noticed by another.

As to the length of time the disease lasts, I was of the opinion that it ran its course in about eight weeks. Under treatment, with me, it has run about the same course—six to eight weeks; all the cases I have seen have been variously treated, but whether or not the treatment cuts short the disease, I do not know.

DR. FRED WISE, New York: I wish particularly to call attention to two points: First, in association with this disease in many instances there is an adenopathy, usually of internal origin. Second, the disease is frequently seen in syphilitic patients. This is not a scientific observation, but simply a clinical fact.

DR. E. L. MCEWEN, Chicago: I feel confident that this disease may appear in epidemic form. Many cases were seen in Chicago during the autumn of last year. I feel confident, too, that it may recur in some instances; I recently saw a case which was unquestionably a second attack. As to the question of itching: In the cases which I have observed I have seldom found this a pronounced symptom. I have never seen a case in which a sedative was necessary. As to the location of the lesion, I have seen a number of cases in which the classical distribution was not present; the exposed parts being involved in some instances. It is on the whole an obscure disorder and one which is worthy of study in all its aspects by every one.

DR. HAROLD N. COLE, Cleveland: I would like to know whether any one has seen two cases in the same family. I have had two patients with recurrences.

DR. JAMES HERBERT MITCHELL, Chicago: I should like to ask whether Dr. Highman has encountered orbicular lesions on the arms coexisting with pityriasis rosea. The late Dr. Harris demonstrated a number of such cases at meetings of the Chicago Dermatological Society. Since that time I have seen a number of similar cases and have made a few photographs. Whether the coexistence of these lesions with pityriasis rosea is merely a coincidence, or whether it is an unusual manifestation of the disorder, I am unable to say. I should like to know whether other members of the Association have observed these lesions in pityriasis rosea.

DR. CHARLES J. WHITE, Boston: I think the only two generalized cases I have ever seen occurred in July. One was in a physician and the other in his wife; there was no surface not involved.

In regard to the itching: All cases in which I have seen that phenomenon have been overtreated. Dr. Stelwagon advocated sulphur. I dislike to differ with him on any subject, but the patients that do best are those treated with mild washes.

As an illustration of this point, I wish to mention a patient from Chicago who had used an ointment containing sulphur and oil of cade; he had as bad a case of eczema as I have ever seen.

DR. JEROME KINGSBURY, New York: I should like to endorse the observations as to the epidemic quality, the frequency of general adenopathy and the

probable external origin of the disease. Several years ago various routine examinations were made in a fairly large number of cases from my dispensary service, and the frequent enlargement of the more easily palpable glands together with a slight run of temperature was particularly noted. In many of the cases, especially in children, the adenopathy was similar to that of measles. The elevation of temperature seemed to be present only in the early cases, often before the eruption had assumed its characteristic appearance.

Dr. Howard Fox, New York: From the academic standpoint pityriasis rosea is an interesting disease to dermatologists, but from the practical standpoint it is of relatively small importance. It is a self-limited disease, running a comparatively short course, and in the majority of cases not causing any appreciable subjective symptoms. I have never noted any pruritus that was severe enough to require an opiate, the itching being generally readily relieved by an ordinary calamine and zinc lotion. The chief importance of the disease lies in the possibility of its being mistaken for the macular syphilid.

I have nothing to add regarding the possible causation of pityriasis rosea, but I might mention a point not touched on in Dr. Highman's paper regarding the types of lesions in this disease. In making notes on my cases I have been in the habit of recording three types of lesions—punctate, macular (often fusiform) and circinate. The circinate lesions are certainly the most striking in appearance and by many considered most typical of the disease. They constituted, however, only 54 per cent. in my series of cases.

Dr. Udo J. Wile, Ann Arbor: I should like to subscribe to Dr. Highman's view regarding the epidemic character of this disease. I have an unusual opportunity to observe it, no doubt, because we have a migratory population of about 10,000 students who come from various parts of the country. We know that every year when they return to school we shall have an epidemic of pityriasis rosea. Last fall I saw twenty-three cases within three weeks; I have seen two young ladies who lived in the same dormitory come down with pityriasis rosea, and I have seen the same thing occur in the fraternity houses. A few years ago I had an opportunity to hospitalize some patients because we had a little outbreak in the hospital, and it occurred to me that nothing had ever been done to demonstrate a possible virus as the causative agent. The possibility seemed at least tenable. In two patients we removed as much tissue as we could by scaling, took them up with salt solution and passed them through the Berkefeld filter, much as we were then doing with the molluscum contagiosum experiments. The filtrate was implanted in my own skin and that of my assistants, with absolute failure to demonstrate any virus. Our experiments were too limited, however, to exclude a virus definitely.

Dr. Sigmund Pollitzer, New York: So many facts in the history and development of this disease indicate that it is an infection that it seems to me that that is the most plausible hypothesis. All attempts to demonstrate any organism in the lesions, however, have been failures, perhaps for some one reason; namely, that efforts are made to find the organism in the characteristic lesions of the disease. It seems to me obvious that the characteristic lesions are secondary; that they are analogous to an eczematoid or to a tricophytoid eruption, resulting from the primary or mother patch. Consider the course of the disease—first, the primary patch lasting several days or several weeks, and then, quite suddenly, a more or less universal eruption over the body exactly as if there had been a sudden dissemination from a fungus which had matured and its spores then scattered over the surface, or as if there were a toxic absorption from the primary patch which resulted in an eruption of lesions analogous

to the eruption of an exanthematic fever. Against the idea that there is a development of spores is the apparently symmetrical distribution of the disease. You cannot imagine dissemination of spores from a patch, for example in the groin, producing lesions with almost perfect symmetry over the body. For my part I am strongly inclined to the view that we have an external or local infection giving rise to the primary patch with secondary development of the other lesions as the result of some toxic absorption from the primary patch. On the other hand, observers in general are quite unanimous in reporting the occurrence of a primary patch in only a moiety of the cases. It seems to me hardly likely that a primary patch could develop and disappear, so that a trained observer could not find at least an area of pigmentation, in the few short weeks before the development of the rash. This is important—have these cases always a primary patch?

Dr. Highman did not mention the proportion of his cases in which the primary patch was observed, and I should like to hear from him on that subject. If there is no primary patch in a large series of cases it still further complicates the situation and leaves us still further in the dark.

With regard to frequency of occurrence, our statistics are exceptionally harmonious. In a report which I shall present tomorrow, in 48,611 cases of skin diseases, 10.3 cases per 1,000 were pityriasis rosea, and in the last report made in 1916, an exceptional coincidence, practically the same number of cases per thousand—8.2—were pityriasis rosea. This dermatosis occurs, therefore, in the ratio of about one case in 100, in American dermatologic practice. Recurrence in the same person is unlikely when we consider the small number of cases that are seen, but the fact that we do get a few recurrences would completely negate the idea of any protection or immunity.

Dr. Charles M. Williams, New York: Regarding the recurrence, the cases reported are the ones observed having dermatitis. I believe the disease is much more common generally than these figures indicate.

Dr. Thomas Casper Gilchrist, Baltimore: In one case I thought all of the symptoms occurred in one day. I found definite spores and decided that my diagnosis was wrong. A medical student exposed his chest one day, and the eruption which appeared twenty-four hours later looked like punctate pityriasis rosea.

Eighteen months ago I called attention to another case of the type brought out by Dr. Wise. Dr. Strobel and I have watched some cases that persisted; examination revealed latent syphilis. I think that also holds true in many other diseases of the skin. Patients with latent syphilis contract some other disease: the syphilis then alters the character of the disease.

Dr. William Allen Pusey, Chicago: One point in regard to the itching: The disease is so trivial that careless people, if they do not fear syphilis, are likely to pay no attention to it. The class of patients with pityriasis rosea who come to a clinic will probably not come at all unless itching is present; I think this factor as regards itching in the cases in the clinic should be considered. In private practice it is the unusual case in which there is severe itching.

Dr. Harry E. Alderson, San Francisco: I should like to know whether any of the patients observed by Dr. Highman had lesions on the face or hands. I saw one last week with lesions just under the ear and on the backs of the hands.

DR. WALTER J. HIGHMAN, New York, (closing): I did not say there were no recurrences. I said they were rare and I had never seen one.

As to the element of the relation to the tonsils, I confess a weakness. I have in my etiologic meanderings focused on the fauces, but I cannot see any relationship between focal infection and someting that obviously starts as a local disorder. If it were due to focal infection, not only in the tonsil, but at other parts of the body, it might be incriminated. Pityriasis rosea may be due to the tonsillar infection, but it seems to me so far-fetched that I question it.

I cannot agree with Dr. Wise in regard to the presence of syphilis. I have not looked into the matter particularly, but see no reason why a syphilitic patient should not have pityriasis rosea.

In answer to Dr. Cole's question: I have never seen any familial cases. I wish I might, for it would support my convictions greatly. Neither have I seen any orbicular lesions. I did not pay particular attention to these lesions so far as this report is concerned.

I agree with Dr. White regarding overtreatment in pityriasis rosea. The points he brought out are contained in the paper, but I did not mention them in the course of the abstracts read. I find that local medication that is tolerated well consists of lotions and powders and that creams and ointments of any sort increase the eruption and irritation.

In the fifty-two cases taken up there had been no previous treatment. Otherwise, I would not have included them in the series.

As to the question of adenopathy, I did not find any enlarged glands in my series. I do not doubt that Dr. Kingsbury did in his, but I am reporting mine. I do not believe a temperature of 99 F. in the afternoon is remarkable. I believe if we took our temperature in the afternoon we would often find as much fluctuation in apparently well people as in those with pityriasis rosea.

Replying to Dr. Pollitzer's question as to the number of cases in which there was a primary plaque: In forty-nine out of the fifty-two cases this was definitely seen.

In regard to Dr. Pusey's idea of the clinic patients complaining of itching: the fact that itching brings them in might influence the diagnosis. These were all private cases that I reported.

I do not know whether Dr. Alderson refers to the disseminate lesions on the face—I have never seen one.

MYELOID LEUKEMIA OF THE SKIN *

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Leukemic infiltrations in the skin must apparently be regarded as an exceptionally rare condition in myeloid leukemia, although numerous instances associated with the lymphatic type are recorded.

Hazen,[1] in 1911, in a thorough review of the skin changes in the leukemias could find in the literature only five cases of the myeloid type. These were reported by Hindenberg,[2] Nékám[3] (two cases), Rolleston and Fox[4] and Bruusgaard.[5]

Arndt,[6] in the same year, in his extensive studies on the lymphadenoses of the skin refers to only two cases, namely, those of Hindenberg and Bruusgaard.

Of a later date we have been able to find only one instance of this condition, that published by Saphier and Seyderheim[7] in 1920. These authors in their review of the literature state that they were able to find only one case with a histology similar to that of their own and that was the one published by Bruusgaard. They did not include Rolleston and Fox's case because of the absence of premature myeloid cells in the skin nodules and because the diagnosis was not supported by necropsy.

Of these six cases the cutaneous lesions were demonstrated to be composed of a cellular infiltration of myeloid elements in only three. Hindenberg's patient had a single small apple-sized tumor on the thigh which, however, was not examined histologically. The two patients of Nékám, according to Hazen, had maculopapular eruptions, but here also no histologic examination was apparently made.[8] There remain then only the cases of Rolleston and Fox, Bruusgaard, Saphier and Seyderheim, the first of which showed an infiltration in the skin of mature myeloid cells and the other two of immature myeloid cells.

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* Read at the Forty-Fifth Annual Meeting of the American Dermatological Association, Washington, D. C., May 2-4, 1922.

1. Hazen: J. Cutan. Dis., October, 1911.
2. Hinderberg: Deutsch. Arch. f. klin. Med. **54**:209, 1895.
3. Nékám, quoted from Hazen.
4. Rolleston and Fox: Brit. J. Dermat. **21**:377, 1909.
5. Bruusgaard: Arch. f. Dermat. u. Syph. **106**:105, 1911.
6. Arndt: Dermat. Ztschr. **18**:1, 1911.
7. Saphier and Seyderheim: München. med. Wchnschr. **67**:69, 1920.
8. Since this paper was read, this statement has been verified by an examination of Nékám's article; see discussion by Hazen. Nékám: Ueber die Leukaemischen Erkrankungen der Haut, Hamburg and Leipzig, 1899.

CASES REPORTED IN THE LITERATURE

1. *Rolleston and Fox's Case.*[9]—A woman, aged 58, had firm, slaty gray or plum-colored nodules most thickly distributed over the front of the trunk and above the pubis. A few were also present at the top of the sternum and on the back and extremities. The highest white cell count was 730,000 with 50 per cent. polymorphonuclear leukocytes, 31 per cent. large lymphocytes, 4 per cent. small lymphocytes, 2 per cent. eosinophils, 10 per cent. myelocytes and 3 per cent. eosinophilic myelocytes.

Histology: The corium and upper portion of the subcutaneous tissue showed between the collagen bundles a dense infiltration of cells which appeared to be lymphocytes and polymorphonuclear leukocytes. There was a complete absence of plasma cells and only a few mast cells were found.

2. *Bruusgaard's Case.*—A man, aged 38, had, on the trunk and upper extremities, bluish infiltrations the size of a pea or larger, which extended into the subcutaneous tissue. Larger flat infiltrations were present in the lower dorsal and sternal regions. There was a slight enlargement of the submaxillary and axillary glands. The spleen was 39 cm. in its long diameter. Necropsy revealed typical changes of myeloid leukemia in the internal organs.

Histology: In the subcutaneous tissue, around the hair follicles and especially about the sweat glands, there was a cellular infiltration lying in a fine connective-tissue stroma. With Ehrlich's stain the majority of the cells showed large pale nuclei and a moderate amount of protoplasm with violet granules; these were identified as neutrophilic myelocytes. They varied in size, some of them being true micromyelocytes. Eosinophils, mast cells, neutrophilic leukocytes and cells with a weakly staining basophilic protoplasm, either large lymphocytes or myeloblasts, were also present. Occasionally small lymphocytes and still more rarely nucleated red blood cells were found.

Blood Examination: This revealed: red cells 5,140,000, white cells 410,000, neutrophilic myelocytes 60 per cent., polymorphonuclear leukocytes 18 per cent., eosinophils 6 per cent., basophils 4 per cent., large lymphocytes 6 per cent., small lymphocytes 2 per cent. and large mononuclears and transitionals 4 per cent.

3. *Saphier and Seyderheim's Case.*—A woman, aged 47, first came under observation about a year previous to the appearance of the skin

9. We have included this case because a consideration of the blood picture renders it almost certain that it was one of myeloid leukemia. In the brief histologic report, the only reference to the type of cellular infiltration is that it appeared to consist of lymphocytes and polymorphonuclear leukocytes. One feels that with special methods of staining immature myeloid cells might have been found.

lesions while she was receiving roentgen-ray treatment in the hospital for leukemia. There was improvement in the blood picture and decrease in the size of the liver and spleen. She had a relapse and was again admitted to the hospital about one year later. While she was in the hospital reddish cutaneous and subcutaneous nodules, varying in size from that of a pea to that of a bean, developed on the nose and along the ramus of the jaw. These were covered with crusts in from twenty-four to forty-eight hours. The under lip was swollen and infiltrated. During the next ten days other lesions appeared on the forehead, which, however, showed no tendency to break down. The patient died eleven days after the first appearance of the cutaneous lesions. The anatomic diagnosis was myeloid leukemia.

The blood count about two weeks before development of the skin lesions was: white blood cells 280,000, polymorphonuclear leukocytes 16 per cent., myeloblasts and myelocytes 58 per cent., eosinophils 15 per cent., mast cells 8 per cent. and lymphocytes 3 per cent. On the day of her death the blood count showed a decrease of white cells to 17,600 with 69 per cent. of myelocytes and myeloblasts.

Histology: (Nodule taken from nose; pus formation in the center.) A cellular infiltration was found, most marked in the subcutaneous tissues but also around the hair follicles and sweat glands in the cutis. The majority of the cells were myeloid leukemic elements, consisting of neutrophilic myelocytes, mast myelocytes, eosinophils and large lymphoid cells which were probably myeloblasts, although the oxydase test was not made. A few erythroblasts and red cells were found. Endothelial cells were seen about the distorted capillaries.

REPORT OF A CASE [10]

A woman, aged 63, in whose family and past history there was nothing of importance, first came under observation in March, 1916, when she was admitted to The Woman's Hospital for an attack of bronchopneumonia, from which she recovered without complications. At this time there were no skin lesions.

Early in December of 1916, just nine months later, she developed an attack of what she termed "sciatic rheumatism." The condition was described as a severe pain in the lower part of the back which radiated down the dorsal surface of the right leg to the heel. Gradually the discomfort shifted up into the abdomen, and there was pain which was especially severe in the upper quadrants.

A few days before the onset of these severe pains she had noticed an eruption below the costal margins on the abdomen. These lesions were described as bluish-red nodules somewhat like hives. They were slightly elevated and itched intensely. They increased rapidly in size and within a few days fresh nodules had appeared on the top of the head, around the neck and

10. The patient was seen on two or three occasions during her illness by one of us (L. W. K.); this, however, was before the diagnosis of leukemia was made. Although the case is remembered distinctly, the description of the lesions has been taken entirely from the notes on the patient's history.

Fig. 1.—Actual oil immersion field in fatty layer of skin nodule taken at necropsy. Extreme upper border shows eosinophil with double nucleus. Immediately below are two degenerating cells. Near the center are three large phagocytic cells. Most of the remaining cells are neutrophilic myelocytes.

within and behind the ears. On December 6 she was again admitted to The Woman's Hospital [11] complaining bitterly of generalized abdominal tenderness and itching of the skin.

Examination.—On admission the patient was well nourished and showed no loss of weight. She was sallow and her mucous membranes were pale. There was no elevation of temperature. Examination of the chest was negative. The heart was slightly enlarged. The abdomen was tense. On light palpation there was generalized abdominal tenderness, most marked in the right and left upper quadrants. The liver was enlarged, palpable four fingerbreadths below the costal margin. It was hard and tender, and apparently nodular. The spleen likewise was enlarged, smooth and tender. The notch was not palpable. There was slight general glandular enlargement. The reflexes were normal. The

Fig. 2.—Myeloid leukemia of the skin.

extremities revealed no abnormality. The skin eruption consisted of bluish-gray, slightly elevated nodules which varied in size from that of a pinhead to that of a pea. They were distributed over the upper part of the abdomen and the lower thoracic region, and there were a few lesions over the sides of the neck. There were also many nodules behind and within the ears, and the entire scalp was intensely infiltrated, suggesting, as the patient described it, a "nutmeg grater."

11. The patient was under the care of Dr. Sidney R. Miller until her admission to the Johns Hopkins Hospital.

The examination of the blood revealed a secondary anemia without any variation in the differential formula of the white cells. The urine contained a trace of albumin. The blood Wassermann test was negative.

The clinical impression at that time was that the nodules were metastases from some abdominal tumor. The patient was discharged from the hospital unimproved, after fourteen days.

Second Admission.—About two weeks after her return home she began to have "choking spells," and on Jan. 30, 1917, she was admitted to the Johns Hopkins Hospital, two months after the appearance of the skin lesions. A most remarkable change had taken place. The eruption had spread over the

Fig. 3.—Myeloid leukemia of the skin. Same as Figure 1.

entire body. The nodules had become greatly enlarged, some measuring 2 or 3 cm. in diameter (Fig. 2). The canal of the right ear was almost closed by the confluent nodules (Fig. 3). The lesions were shiny, elastic, sensitive to pressure and had a mahogany color. The study of the blood revealed nothing more than a secondary anemia. No Bence-Jones protein was found in the urine. The condition of the abdomen had greatly improved. There was no rigidity or tenderness. The spleen and the liver had decreased in size and neither organ was tender. The nose and throat examination revealed enlarged tonsils with numerous nodules similar to those seen in the skin scattered over the mucous membranes. In the mucous membrane of the pharynx there were

numerous nodules and petechiae. The eyegrounds showed no abnormality. The blood examination showed 4,112,000 red cells per cubic millimeter; white cells 3,100, hemoglobin (Sahli) 48 per cent., color index 0.59. The differential count of 250 cells was as follows: polymorphonuclear neutrophils 55.6 per cent., polymorphonuclear eosinophils and basophils each 0.8 per cent., small lymphocytes 11.2 per cent., large lymphocytes 25.2 per cent., transitionals 6.4 per cent. A number of large mononuclear cells were also present, the classification of which was difficult. No regeneration forms were seen. The clinical impression was that we were dealing with a moderately advanced secondary anemia. Other laboratory examinations, including the blood Wassermann test, the stool, the renal function and blood culture, were entirely negative. The urine constantly contained a small amount of urobilin and a trace of albumin. Dr. T. C. Gilchrist, who saw the patient at this time, thought the condition resembled a nodular leprosy, but this was ruled out by the examination of nasal secretion and material from nodules.

Course of Illness.—The patient's progress in the hospital was most remarkable. During the first two weeks a distinct improvement was observed. The skin eruption retrogressed until the nodules were nothing more than discolored macular areas. The spleen and the liver were no longer tender although they could be easily felt. The nodules on the mucous membrane of the throat had entirely disappeared.

A week later the patient's temperature, which had previously been about 99 F., suddenly rose to 101 F. She complained of tenderness in the region of the spleen. Coincident with this symptom there appeared over the entire left leg, which was quite hard and tender on pressure, a hemorrhagic eruption, made up of innumerable spots irregular in size. These were bright red and in some areas confluent. They did not appear on any other portion of the body except the buccal cavity, where one could see a number of discrete petechiae in the mucous membrane. In the course of a few days there was some improvement in her general condition, and in about two weeks the eruption had entirely disappeared. The blood examination made at the appearance of the hemorrhagic eruption had revealed a decided increase in the large mononuclears with a decrease in the polymorphonuclear cells (Table 1).

During the last week in March the temperature again became elevated, and the patient complained of general weakness with abdominal tenderness. There was marked mental apathy. The nodules which had practically disappeared suddenly began to increase in size and number, and fresh groups were noted over the front of the chest, the hypochondrium and the back. These lesions were cyanotic, glistening, reddish gray. On the pharynx a number of fresh red elevations were seen. The liver and the spleen had again become greatly enlarged and there was marked tenderness below the costal margins. The examination of the blood on March 23 revealed: red blood cells 3,816,000, leukocytes 10,000, hemoglobin (Sahli) 49 per cent. The differential count is given in Table 2.

Two normoblasts and six megaloblasts were seen in counting 200 cells. The oxidase reaction showed that 70 per cent. of the white cells contained an oxidase ferment. An analysis of the differential count showed that 68.5 per cent. of the cells were myeloid, 21 per cent. were lymphoid and 10.5 per cent. were unclassified elements. The blood picture at this time suggested an atypical myeloid leukemia, atypical because of the relatively low leukocytosis.

The patient grew rapidly worse. About three days after the onset of the acute symptoms the examination of the blood showed that the leukocytosis had

TABLE 1.—Results of Blood Examinations

Date	Red Blood Cells	White Blood Cells	Percentage Hemoglobin	Color Index	Polymorphonuclears			Mononuclears + Transitionals	Myelocytes	Myeloblasts	Total Myeloid Cells	Small Lymphocytes	Large Lymphocytes	Pathologic Lymphocytes	Total Lymphoid Cells	Nuclei Unclassified	Normoblasts	Megaloblasts	Skin Eruption
					Neutrophils	Basophils	Eosinophils												
12/ 1/16*	.....	....	..	....	....	...	...	....	...	....	....	....	....	...	....	....	...	...	Eruption first appeared on the abdomen and chest
1/30/17	4,112,000	3,180	48	0.59	55.6	0.8	0.8	6.4	0	0	63.6	11.2	25.2	0	36.4	0	0	0	Eruption covered entire body; nodules were present on the pharynx; skin nodule removed for examination
2/ 1/17	.....	4,200	..	....	....	...	...	....	...	....	....	....	....	...	....	....	...	...	Liver and spleen greatly enlarged
2/ 2/17	.....	5,320	..	....	....	...	...	....	...	....	....	....	....	...	....	....	...	...	Nodules had decreased in size
2/22/17	4,288,000	3,680	58	0.60	28.5	0	0	52.0	0	0	90.5	9.5	0	0	9.5	0	0	0	Nodules had disappeared, leaving pigmented macules; liver and spleen have decreased in size; hemorrhagic eruption had appeared on left leg following rise in temperature
3/ 9/17	.....	6,800																	
3/13/17	.....	....	..	....	60.0	0	0	32.5	0	0	92.5	1.5	6.0	0	7.5	0	2	1	By March 10 the hemorrhagic eruption had disappeared
3/14/17	4,124,000	3,560	55	0.67															
3/20/17	.....	....	..	....	....	...	...	....	...	....	....	....	....	...	....	....	...	...	Nodules had again appeared over the entire body; they were also present in the pharynx
3/23/17	3,816,000	10,920	49	0.64	30.0	1.0	0	18.5	11.5	7.5	68.5	5.0	8.5	7.5	21.0	10.5	5	6	Marked abdominal tenderness; liver and spleen were enlarged again; nodules increased in number and size; blood picture suggested myeloid leukemia
3/26/17	.....	4,800																	
3/27/17	.....	3,160																	
3/29/17	3,160,000	3,350	28	0.45	21.0	0	0	40.0	0	0	61.0	11.0	12.0	8.0	31.0	8.0	0	0	Bleeding from the mucous membranes
3/30/17	.....	3,900	..	....	....	...	...	....	...	....	....	....	....	...	....	....	...	...	Epistaxis was severe, requiring transfusions
3/31/17	.....	5,900	28	....	....	...	...	....	...	....	....	....	....	...	....	....	...	...	Numerous petechiae and large hemorrhages into the skin
4/ 1/17	.....	4,250	32	....	....	...	...	....	...	....	....	....	....	...	....	....	...	...	Bleeding arrested; ulceration of facial nodules had commenced
4/ 4/17	3,144,000	16,900	28	0.45															
4/11/17	.....	68,740	18	....	....	...	...	....	...	....	50.0	....	....	...	40.0	10.0	...	...	Patient died in coma

* From Dec. 1, 1916, to Jan. 30, 1917, blood examinations revealed a moderately advanced secondary anemia

been replaced by the original leukopenia. During the last ten days of her life numerous purpuric spots appeared in the skin accompanied by minute petechiae in the mucous membrane of the pharynx and conjunctivae. Ulceration of the nodules on the face and neck began. Frequent bleeding from the nose and throat necessitated transfusion, but there was no improvement in her condition. On the day of her death there was a leukocytosis of 64,000 cells, and the examination of the blood confirmed the clinical diagnosis of chronic myeloid leukemia.

Gross Pathology.—The heart showed numerous hemorrhagic areas throughout the endocardium, many of which were fresh and a brilliant red. There were numerous fresh hemorrhages under the pleurae. The spleen extended down to the level of the umbilicus and weighed 1,350 gm. It was bright red, slightly mottled and pulpy in consistency except for the presence of several hard nodular areas. The liver weighed 2,200 gm. The capsule was smooth and glistening. No nodules or hemorrhages were seen. A number of small old and fresh hemorrhages were scattered through the mucosa of the intestines and the capsules of the kidneys. There was general glandular enlargement. The glands were dark in color, showing numerous hemorrhages. In consistence they were soft and pulpy.

TABLE 2.—DIFFERENTIAL BLOOD COUNT

Type of Cell	Number of Cells Counted	Percentage	Absolute Number
Polymorphonuclear neutrophils	60	30.0	3,000
Polymorphonuclear eosinophils	0	0.0	0
Polymorphonuclear basophils	2	1.0	100
Transitional cells	37	18.5	1,850
Myelocytes	23	11.5	1,150
Myeloblasts	15	7.5	750
Small lymphocytes	10	5.0	500
Large lymphocytes	17	8.5	850
Pathologic lymphocytes	15	7.5	750
Nuclei unclassified	21	10.5	1,050
Total	200	100.0	10,000

Microscopic Pathology.—Sections of the various organs revealed an infiltration of large mononuclear cells, identified as myelocytes. In the liver, spleen and lymph glands there were many mitotic figures. These organs also showed a number of small cells which contained what at first appeared to be parasites but which later were decided to be nuclear fragments. They varied in number from two to four to a cell. The protoplasm of the cells took a pale eosin stain. In no way did they resemble the myeloid cells.

In the section of a skin nodule made in January, 1917, before the death of the patient, similar cells were seen associated with lymphoid and connective tissue cells. This section was studied by the entire pathologic staff of the Johns Hopkins Hospital, and the consensus of opinion was that the condition was not that of a myeloid leukemia, but that it was possibly some parasitic infection. The oxidase stain was done on this section and it was negative for the oxidase ferment.

The section of a skin nodule at necropsy showed an entirely different type of cellular infiltration as well as a different arrangement. The picture was definitely that of a chronic myeloid leukemia. The oxidase stain was positive for myeloid granulation. The small granules contained in some of the cells, which at first had suggested parasites, on further study were thought to be fragmented nuclei.

HISTOLOGIC STUDY OF THE SKIN

(*A*) *Necropsy Material.*—This consisted of three pieces of tissue, each about 1 inch (2.54 cm.) in width, which extended into the fatty layer. They had been fixed in Zenker's fluid and mounted in paraffin. Fresh sections were cut from the blocks and the common laboratory stains were made, including Giemsa's and Wilson's stains for blood cells. Good preparations were obtained with both of these stains, which gave practically identical results.

One of these pieces of tissue had included a small nodule involving about one half of its width, the remaining portion being practically unaffected. This was used for the histologic description.

The epidermis showed no definite changes worthy of note.

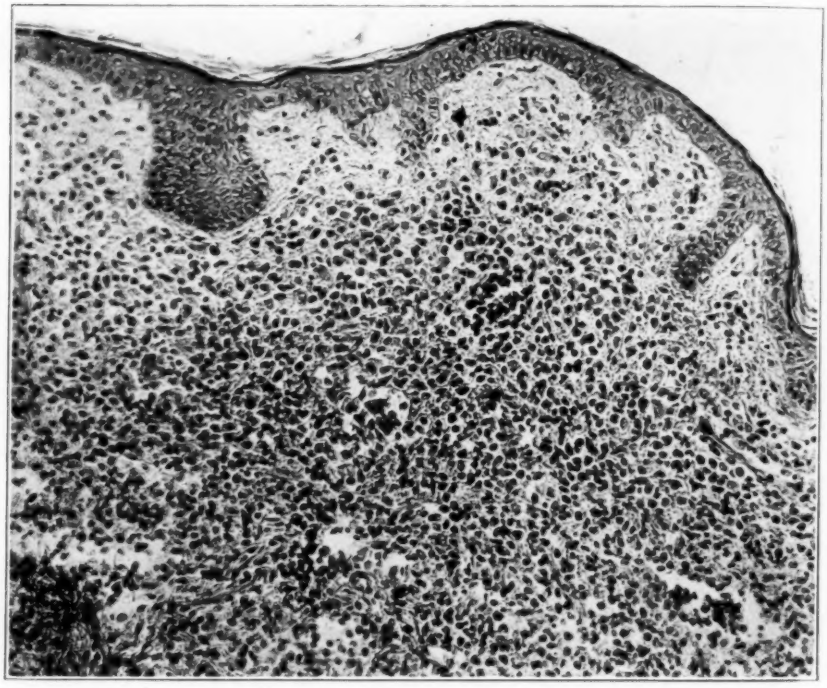

Fig. 4.—Low magnification of skin nodule taken at necropsy. Infiltration in cutis is shown.

In the cutis and upper portion of the subcutaneous tissues there was an infiltration of cells forming dense confluent masses in the fat columns, surrounding the sweat glands, hair follicles and blood vessels, with also a partial diffuse infiltration consisting of rows of cells extending out between the collagenous bundles of the reticular layer. The infiltration was most extensive in the fatty layer, extending roughly upward in cone shape where it diffusely infiltrated a small portion of the reticular layer, which occupied relatively the center of the nodule. There was no invasion of the epidermis and the papillary layer was comparatively unaffected (Figs. 4 and 5).

No changes were noted in the collagenous tissue except in so far as it was crowded out by the invading cells.

Character of Cellular Infiltration, Giemsa's Stain: Neutrophilic Myelocytes: These were by far the predominating cells of the infiltration. They were larger than the usual leukocyte and had a well defined ring of finely granular protoplasm which stained a muddy pink. The nuclei were comparatively large and most of them were round, but frequently irregular forms were noted. The chromatin was arranged in a coarse reticulum of variable density and took a

Fig. 5.—Same as Figure 4, but infiltration in fatty layer of the skin is shown.

blackish stain with a moderate degree of intensity. Mitotic figures were frequently seen (Figs. 1 and 6).

Small Lymphocytes: These were the cells encountered next in order of frequency. They contained small round or irregular nuclei which stained intensely blue in contrast with the more blackish tint of the myelocytes. Around most of them a faint, thin, nongranular rim of protoplasm was visible which usually stained pinkish with both Giemsa's and Wilson's stains. These

lymphocytes, although present to some degree in all fields of the microscope, were unevenly distributed, varying from only a few cells in some areas to the predominating cells in others.

Phagocytic Cells: There was a considerable number of these cells distributed all through the infiltration. They were much larger than the myelocytes, but the nucleus was comparatively small, often no larger than that of a small lymphocyte. They contained an abundant, finely granular, pinkish-staining protoplasm which usually assumed an irregular outline. These cells were actively phagocytic, many of them containing nuclear fragments and occasionally whole cells.

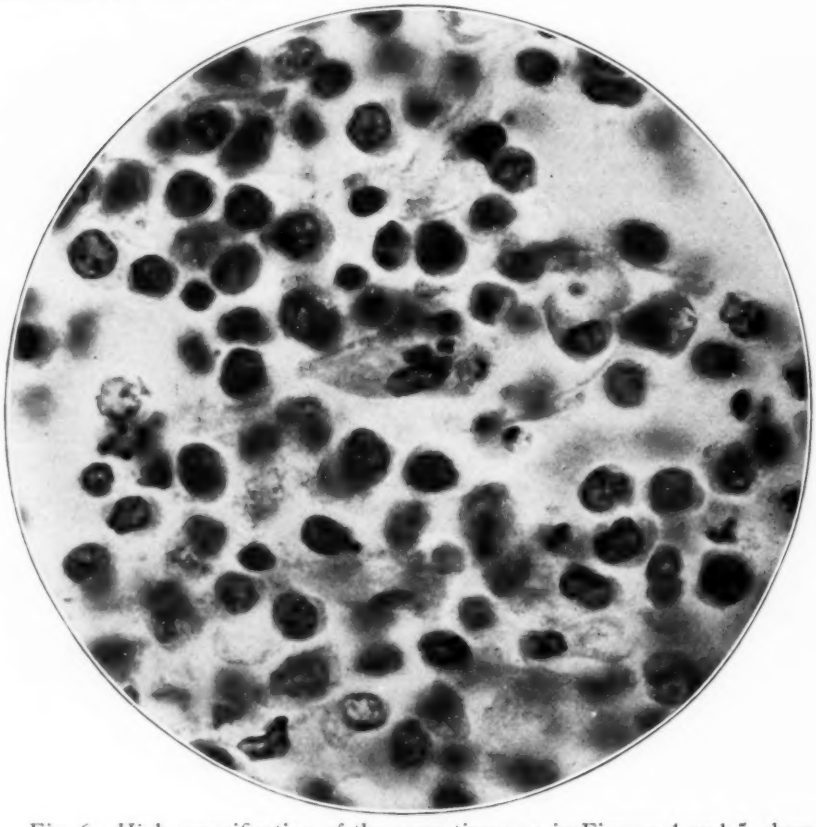

Fig. 6.—High magnification of the same tissue as in Figures 4 and 5, showing character of cellular infiltration. In the center is a large triangular phagocyte containing nuclear fragments. Just above is an eosinophil with a double nucleus. At either side there are degenerating cells. Most of the large cells are myelocytes.

Eosinophilic Cells: Occasionally cells were seen which were on the average smaller and contained somewhat coarser and more pinkish-staining granules than the myelocytes previously described. They contained usually two bluish-staining nuclei situated often at opposite sides of the cell. The coarseness and intensity of staining of the granules, however, was not so striking as in those usually encountered in cells of this type found in the skin in other diseases.

Cells with Nuclear Degeneration: These were rather numerously scattered throughout the infiltration and were unusual in appearance, suggesting at one time the possibility of intracellular parasites. In cells so affected the nucleus had apparently been broken up into anywhere from two to ten or fifteen homogeneous chromatin masses, of various sizes and shapes, scattered about within the protoplasm of the cells. These stained intensely blue in contrast to the blackish color of the nuclei of the myelocytes. Where the semblance of the nucleus was left the chromatin had gathered around the edge in two or three homogeneous black, oval or triangular masses. Occasionally these small nuclear fragments were found lying free or in the protoplasm of the phagocytic cells.

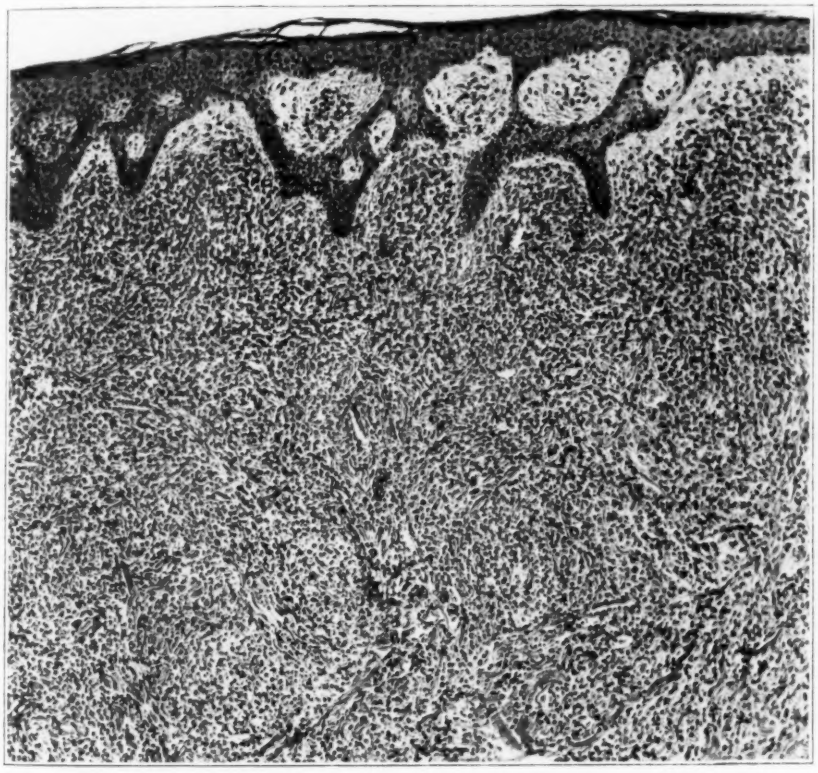

Fig. 7.—Low magnification of skin nodule taken during the first eruption.

It was difficult to determine in the later stages which cells were affected by these peculiar degenerative changes as the granulation was often indistinct; but most of them were apparently derived from the eosinophils and perhaps occasionally from polymorphonuclear cells. No connecting links were found which suggested their origin from the myelocytes or lymphocytes.

Neutrophilic leukocytes, metamyelocytes and a few other cells difficult of classification were occasionally encountered.

No mast cells were seen and only one small group of plasma cells was found lying about a small blood vessel at some distance from the principal

infiltrating mass. The sweat glands and hair follicles were well preserved, and no definite changes were found in the blood vessels or capillaries.

The other two pieces of tissue showed changes identical with the one just described, except that the infiltration was far more limited in its extent.

(*B*) *Tissue Obtained During the Life of the Patient.*—This consisted of a small nodule which was excised during the first eruption of nodules. This material had been preserved in liquor formaldehydi, and we were unable to stain it with the blood cell stains used in the necropsy material, although good preparations were obtained with hematoxylin and eosin. As will be noted in

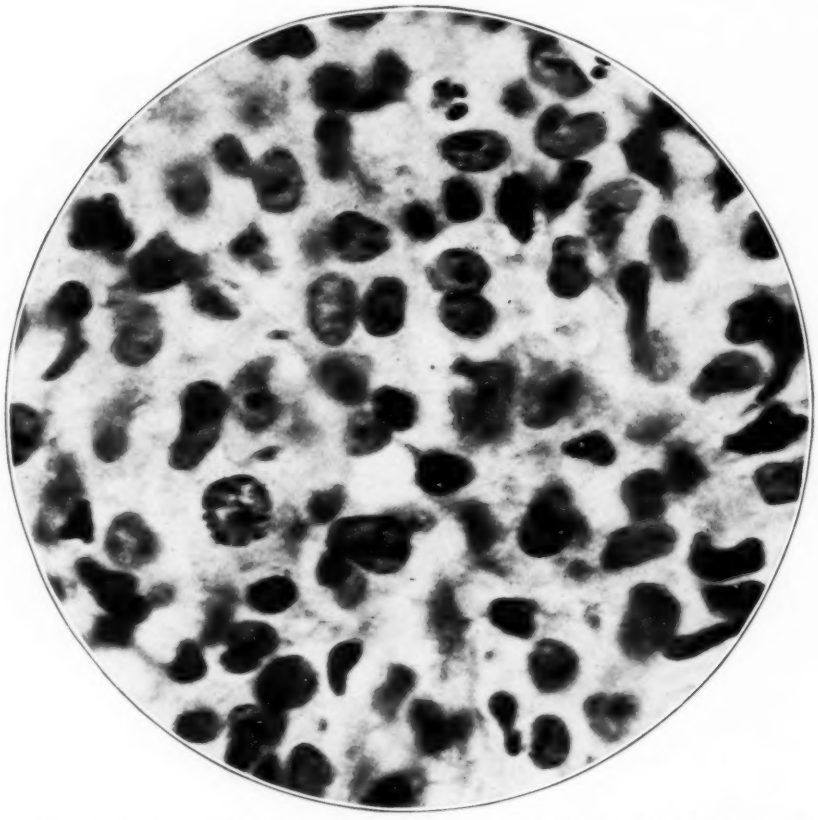

Fig. 8.—High magnification of the nodule shown in Figure 7. Compare with Figure 6 and note difference in size of cells, appearance of nuclei and absence of individual rim of protoplasm.

the necropsy report, these sections varied considerably in appearance from those obtained at necropsy. The infiltration consisted of cells with large round or oval nuclei which resembled more those of connective tissue or endothelial origin than myeloid elements (Figs. 7 and 8). They were arranged in masses of various sizes or in strands between the connective tissue bundles, which, when not too much crowded by the invading cells, were well preserved. Although there was a fine granular or reticulate intercellular substance, they did not have the definite individual mantle of protoplasm shown by the myelo-

cytes in the necropsy material. There were comparatively few cells of a different type present. A few small lymphocytes and occasionally rather poorly staining eosinophils were noted.

None of the large phagocytic cells was present, and the degenerating cells described in the foregoing, although encountered, were not so numerous as in the necropsy material. Mitotic figures were occasionally seen.

SUMMARY

A woman, aged 63, noticed an eruption of bluish-red nodules along the costal margins early in December, 1916. A few days later she began to have severe pain in the lower portion of her back and upper abdomen. The nodules rapidly increased in size and distribution, appearing on the head and neck. They were associated with intense itching. Physical examination at this time revealed abdominal tenderness and enlargement of the liver and spleen. The blood examination showed only a secondary anemia. Within a period of two months the nodules had spread over the entire body. They had a mahogany color, and some of them measured as much as 3 cm. in diameter. The spleen and liver, however, had decreased somewhat in size, and there was no abdominal tenderness. The nodules then gradually disappeared, leaving only discolored macular areas. On February 21, there appeared over the left leg a hemorrhagic eruption. This was of two weeks' duration. Repeated study of the blood showed nothing of special importance. In the beginning of March, 1917, the skin nodules again suddenly made their appearance over the body and in the throat, associated with general weakness, a rise in temperature and enlargement of the spleen and liver. The blood count then for the first time showed the picture of myeloid leukemia. The patient died on April 11, about four months after the first eruption of skin nodules, and one month after the blood examination had shown the presence of a myeloid leukemia. Necropsy confirmed the clinical diagnosis.

Histology: Nodules taken from the skin at necropsy showed an infiltration in the cutis and subcutaneous tissues of myelocytes, lymphocytes, large phagocytic cells and curiously degenerated eosinophils. A nodule excised during the first nodular outbreak gave, however, a different picture. Here the infiltration was composed for the most part of large round or oval cells which resembled endothelioid cells more than myeloid elements. Lymphoid cells and a few of the degenerated eosinophils were also present, but none of the phagocytic cells were found which were encountered in the necropsy material. The oxydase test was positive in the necropsy material but negative in that taken during the first eruption.

COMMENT

This patient presented some unusual and rather remarkable features. The complete absence of any changes in the blood suggestive of

leukemia, until within a few weeks before death, made a diagnosis impossible before this time, and even then the white cell count was comparatively low and never reached the proportion usually encountered in this disease.

The skin lesions were the most remarkable feature of the case and offer considerable difficulty as to interpretation. While there is no doubt that the last outbreak of nodules, occurring a short time before death, was a true leukemic infiltration of the skin, it is difficult to explain the cutaneous histologic findings during the first eruption when the invading cells were of an entirely different type and when the blood showed no changes suggestive of leukemia.

The first question, then, which must be answered is: Were we dealing during the entire illness of the patient with a leukemia cutis or was the first nodular outbreak some other disease? Certainly the possibility of a patient having two clinically similar, nodular eruptions of different etiology during one continuous general illness of four months' duration would be remote. The histology and clinical appearance of the lesions of the first eruption would rule out any of the ordinary nodular diseases of the skin with the exception perhaps of metastases from some malignant growth. This solution, however, would not hold, because necropsy did not reveal any indication of a primary neoplasm.

If we accept the conclusion that the first eruption was also a leukemia cutis, how are we to correlate its histology with that of the second eruption? In the latter was found an infiltration of cells, the majority of which were characterstic of the usual picture of myeloid leukemia and in which the oxydase stain was positive, whereas in the former the cells were of an entirely different type and gave a negative oxydase reaction. We believe that there is only one possible explanation. If the first nodular outbreak represented a myeloid leukemia of the skin, the invading cells must have been myeloid cells during some stage of their evoluton. Since they are definitely not myelocytes or any of their derivatives, they must necessarily be somewhere in the scale previous to the myelocyte stage, that is, they must represent some primitive type or hemoblastic cells too young to give a positive oxydase reaction.

Some of these cells, then, must have been carried to the skin through the blood stream, but they were undoubtedly very few and were probably not recognized in the blood studies. A note made in the differential count of January 30 is rather suggestive in this connection. It was stated that "A number of large mononuclear cells were present, the classification of which was difficult."

Since these cells were so few in number in the blood stream, there must have been considerable local proliferation in the skin. The process

here might be analogous to that taking place in some extensively metastasizing malignant growth. In the second eruption, when the infiltrating cells were of a more mature type, local proliferaton probably was not so extensive, although here the comparatively low cell count of only 10,000-64,000 shows that involvement of the skin is not dependent on a high cellular content in the blood, that is, the skin does not serve merely as a depository for the excessive cellular output of the hemopoietic system. It must depend, in some cases at least, more on the vegetative power of the premature white cells and their ability for at least a limited degree of self perpetuation in the skin than on the rapidity of their output in the blood stream. The more immature the cells, the greater would likely be their power of local growth.

No explanation can be offered for the curious nuclear degeneration of the eosinophils.

The large phagocytic cells may have originated either from the endothelial leukocytes of the blood or from fixed tissue cells. It is rather curious that none of them were found in the nodules of the first eruption, but here the degenerating cells were less numerous, perhaps insufficient to stimulate their activity.

CONCLUSIONS

A case of myeloid leukemia of the skin is reported. This condition is apparently rare; only three cases were found in the literature in which a histologic examination had been made.

The disease is characterized by a nodular infiltration of the skin, the most important cells of which are usually the immature myeloid elements, which characterize the blood picture of most of the cases of this form of leukemia, that is, myelocytes.

The cutaneous infiltration, however, may be composed of still more immature myeloid cells or hemoblasts, which do not give a positive oxydase stain.

Involvement of the skin in myeloid leukemia does not depend on the quantity of cells in the blood stream, but is more likely due, in part at least, to the power of the cells for heterotopic proliferation.

The extensive involvement of the skin in this case, with a nodular cellular infiltration, undoubtedly metastatic from the hemopoietic centers, points to leukemia as being more of the nature of a malignant neoplasia than an infection.

DISCUSSION

DR. WALTER J. HIGHMAN, New York: I think Dr. Ketron's paper is a remarkable study of this tremendously rare disease. He emphasized the most interesting points in his conclusions, and I can see no other interpretations than his own that would apply. Some practical points to the students of histopathology arise. Often the histologist is accused of being unable to

help the clinician, and that is because the practitioner expects so much of the histopathologist. Unquestionably, Dr. Ketron would not have been able to classify the case as myeloid leukemia after the appearance of the first nodule. Further than that, we often excise and examine the wrong lesions in making our histopathologic studies, but here, apparently, Dr. Ketron was able to trace the nodules from their inception to their final development, and I think he has not only cleared up the question of myeloid leukemia in the skin, but has also thrown some light on what happens in myeloid leukemia in a medical sense, and when it ultimately becomes sufficiently developed so that we can recognize it.

I think Dr. Ketron has made one of the best contributions that has yet been made in a wide and varied literature.

Dr. Thomas Casper Gilchrist, Baltimore: I saw this case in the beginning in consultation with the author. On the first appearance of the eruption one might have thought it was leprosy, but I would not accept a diagnosis of leprosy unless the bacilli were found. Dr. Ketron makes these sections himself and he investigated the case thoroughly.

There is another way of looking at the case. Cancer is an overgrowth of cells of malignant nature; here is another overgrowth of cells. As I recall the case, the patient entered the Johns Hopkins Hospital the first time and was given large doses of arsenic; this may have had something to do with the disappearance of the lesions.

Dr. Gay, the collaborator, is present and, with the consent of the members, I should like to hear what he has to say about it.

Dr. L. N. Gay, Baltimore: I did not have the opportunity to see the patient before her death. From the clinical standpoint it has been of great interest to compare the morphology of the blood with the histology of the skin, both before death and at necropsy. Without the terminal leukocytosis which the patient showed one would have been doubtful clinically as to the type of blood disease. As Dr. Ketron has stated, the first nodule revealed a number of cells which might be considered young migratory blood cells. This brings up the origin of blood cells, which has never been definitely established. A number of views exist. Drinker summarizes the situation by suggesting the undifferentiated hemoblast as the earliest known blood cell. From this cell the myeloid and lymphoid cells as well as all red blood cells develop. He suggests the endothelial cell as the mother cell of the so-called mononuclear and transitional cells. Is it not possible that these questionable cells found in the first section were undifferentiated hemoblasts?

Dr. H. H. Hazen, Washington, D. C.: It is rather difficult to discuss such a paper without an opportunity to read it carefully and study the sections. The patient may have had a mixed leukemia. The early findings may have been interpreted as mixed, although the myelocyte may not have been present at that stage. In 1910 and 1911, I went over the literature carefully and thoroughly and decided that at that time only five cases were on record, and one case Dr. Ketron did not refer to. My impression is that in Nékám's cases the histologic findings were reported. It is difficult for me to imagine any German worker publishing a case without saying something about the histologic findings, but not having read the literature for so long it is difficult to be sure as to what was in the paper. Fox's case was absolutely typical, as was Bruusgaard's. We must remember that we have two types of cutaneous leukemia. In one there are definite blood cells in the skin, as Dr. Ketron

showed in the final section, and in the other there is a skin eruption associated with toxemia, in which we do not necessarily find the predominating cell.

There are two other interesting facts: First, some of these cases do not show a marked leukocytosis until near the end. There is a terminal leukocytosis, and it should be borne in mind that if we have a case in which there is no leukocytosis early a blood count should be taken shortly before death, for sometimes the terminal leukocytosis is quite marked. The other interesting fact is the question of what attracts the blood cells to the skin. Do they come from a lymphoid tissue in the skin as some have suggested, or are they attracted by some form of chemotaxis which draws out the cells?

Dr. Ketron's paper also shows how many cases are really aleukemia cases at the start.

Dr. Jay Frank Schamberg, Philadelphia: The case referred to by Dr. Ketron is of great interest and importance. A striking feature of his excellent report is the variation in the blood picture from time to time. This should teach us that it is hazardous to commit oneself to a diagnosis without repeated blood examinations. At one period it appears that the patient had a distinct leukopenia. I should like to inquire whether the patient had received any roentgenotherapy because it is known that the roentgen rays or radium will produce a marked reduction in the white cells which may persist for a considerable period of time.

Dr. Fred Wise, New York: There is one point of interest to me especially, because I come in contact with the younger men studying dermatology. This paper demonstrates conclusively that biopsies to be of any value in diagnosis must be taken at different stages of evolution in certain skin diseases. Single specimens are often of no value in the problems confronting the diagnostician. Early, late and intermediate specimens should be examined whenever possible.

Dr. Harold H. Cole, Cleveland: I was greatly struck with the close resemblance of these pictures to those of a patient with Hodgkin's disease recently under observation. That patient had small tumors scattered over the thighs and an intense infiltration of the breast. All of the tumors showed true Hodgkin's disease. I think only by careful study of these cases will we be able definitely to classify them and differentiate them.

Dr. Lloyd W. Ketron, Baltimore (closing): With reference to Hodgkin's disease, I have had the privilege of studying a nodular Hodgkin's disease, but there was no resemblance of its histopathology to that of leukemia cutis. In the latter there was a pure cellular infiltration, while in the former it was for the greatest part a proliferation of the fixed tissue.

With reference to Dr. Hazen's remarks, we know that in the discourses on lymphatic leukemia of the skin there has been a great deal of discussion as to whether the cells originate from the blood stream entirely or whether they come from lymphoid tissue in situ. This question certainly cannot be raised in relation to myeloid leukemia cutis as there are no possible sources of origin of these cells in the skin.

We believe that these tumors in our case were composed of cells metastasizing through the blood stream. If the cells are very young, they may be capable of considerable local proliferation.

I believe the term "mixed leukemia" is not used very much at the present time. Dr. Gay, however, who is an experienced hematologist, can tell you better about this than I.

DR. L. N. GAY, Baltimore: With regard to the term "mixed leukemia": The literature is filled with such terms as, aleukemia, mixed leukemia and pseudoleukemia. In the early literature the term pseudoleukemia was limited to Hodgkin's disease. Later, however, when various types of atypical leukemia were encountered the same term, pseudoleukemia, was applied. Considerable confusion consequently has arisen. Many of the cases described resemble what we now consider cases of aleukemic leukemia, either myeloid or lymphoid in type. As to the term "mixed leukemia," it is not used; in fact, I recall seeing it in the literature only in a few instances.

PITYRIASIS RUBRA PILARIS—FAMILIAL TYPE*

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Pityriasis rubra pilaris was first described by Devergie,[1] in 1857, as "a disease characterized by scaly and horny productions situated chiefly in the sebaceous follicles and by a more or less generalized cutaneous hyperemia." Later Besnier and Richaud described the same clinical condition under the name of pityriasis pilaris. The disease is today generally accepted to be identical with Hebra and Kaposi's lichen ruber acuminatus. The points of identity of the two were recently brought out in an admirable paper by Feldman.[2] Among American authors cases have been described by Taylor, White, Robinson, Zeisler,[3] Ravogli, Heidingsfeld, Shields, Markley and Levin. Nothing definite is known about the pathogenesis. The disease usually begins in early life and persists with occasional exacerbations and periods of remission. Although Hebra's cases terminated fatally, most cases observed in this country have been relatively benign. The particular interest that prompts the present report is the observation of four cases in one family, which occurred in a father and three children. This is the first instance of the familial occurrence of the disease noted in this country, although there are two reports of a similar nature from the continent. The subjoined report is given as added evidence that heredity plays a rôle in the etiology of this rare condition.

REPORT OF CASES

Case 1.—H. K., a man, aged 46 years, had had a cutaneous eruption since early childhood. The patient was presented before the Chicago Medical Society in 1899, by the late Joseph Zeisler, as having a typical example of pityriasis rubra pilaris. A brief description appeared in the *Chicago Medical Recorder* as follows: "The patient, at this time aged 23, presented large areas of erythroderma; branny desquamation in many of these places, exaggeration of the natural folds and furrows of the affected regions, horny punctiform blackish plugs on the dorsal surface of the hands, chiefly the first phalanges, and also ulnar side of the back of the hands corresponding to the follicles of lanugo hairs; hyperkeratotic scaly patches over the knees and elbows. There was

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* Read before the Section on Dermatology and Syphilology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Devergie: Traité pratique des maladies de la peau, 1857, Ed. 2, p. 454.
2. Feldman: J. Cutan. Dis. 1919, p. 227.
3. Zeisler: Chicago Med. Rec. **16**:533, 1899.

no itching and the mucous membranes were free." A report on the pathology of the condition by Dr. Pardee at this time confirmed the diagnosis. Treatment consisted largely of local medication and injections of pilocarpin. The disease gradually improved and for the last twenty years has been so mild as not to interfere with his occupation. In 1902, the question of marriage was discussed. The patient was assured that it was perfectly safe for him to

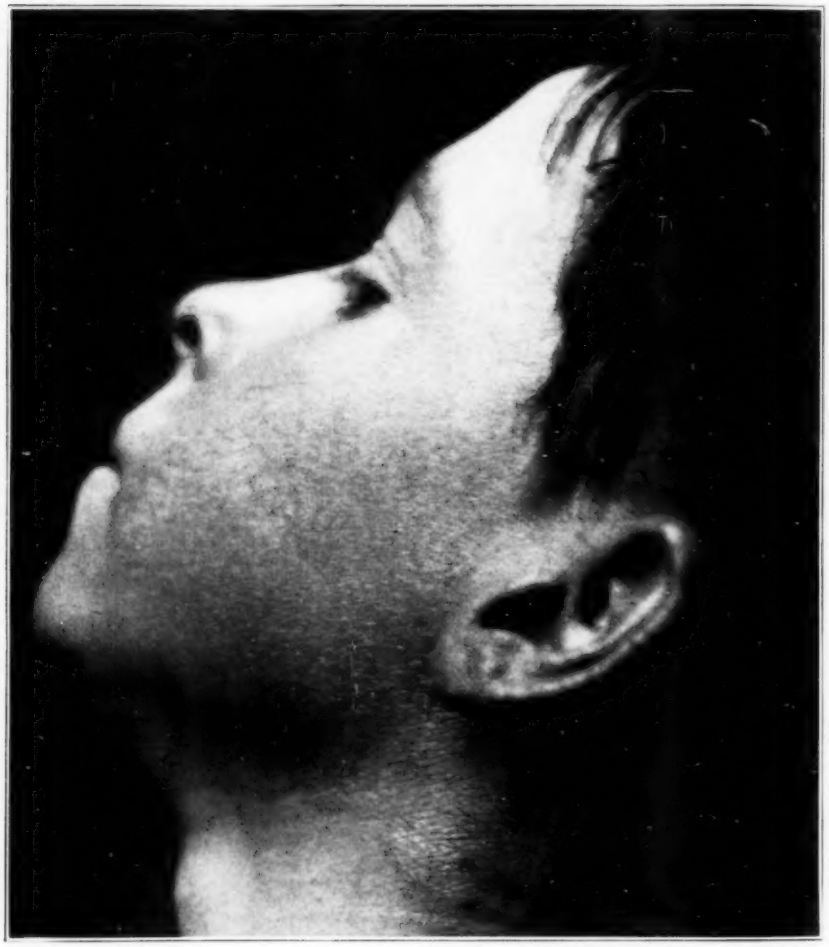

Fig. 1.—Lesions on face of patient in Case 2.

marry as there had been no report of a hereditary transmission of pityriasis rubra pilaris up to this time. Of four children born within the next ten years, three developed the disease during the first year of life.

Examination revealed a healthy, well developed person with normal physical and blood findings. Examination of the skin revealed slight, but unmistakable, evidence of pityriasis rubra pilaris. On the scalp was a branny erythroderma, with involvement of the ears. The face, chest and back were entirely free.

There were scaly rough plaques, chiefly on the extensor surface of the arms below the elbows, and characteristic black "plugs" on the dorsal phalanges and backs of the hands. On the lower extremities were oblong red scaly patches over the knees and on both sides of the calves. The palms and soles showed a diffuse thickening with traverse striations of the nails. There were no subjective symptoms.

Case 2.—M. K., a boy, aged 12 years, had had a cutaneous disorder since early infancy. With the exception of diphtheria and scarlet fever at the age of 4, and measles at 6, his medical history was uneventful. He complained of slight itching in winter and a drawn feeling about his face. The skin of his hands cracked and bled easily in cold weather. During the summer the condition improved and the lesions almost disappeared.

A careful physical examination revealed no evidence of organic disease. The boy was well developed and bright. The tonsils were small and buried. There were small cervical and axillary glands. The thyroid was not enlarged and there was no retrosternal dulness. The genitalia were normally developed. There was no physical evidence of endocrine disturbance.

Case 3.—S. K., a girl, aged 16 years, had always been healthy with the exception of measles at the age of 4. She complained of difficulty in breathing, especially on exertion, which she thought was due to adenoids and enlarged tonsils. The cutaneous disorder began shortly after birth and had gradually improved from year to year, with exacerbations in the cold weather. Pruritus was negligible. Menstruation began at 14 and had been irregular.

Examination revealed a well developed girl with a tendency to adiposity, a full rather slow pulse (60 to 65) with respiratory dyspnea even while at rest. The positive physical findings included the following: A fissured tongue, enlarged cryptic tonsils, cervical adenopathy, a fairly large soft thyroid, slight cardiac enlargement without murmurs and dulness over the upper sternum on percussion. A roentgenologic examination showed a mediastinal shadow which was interpreted as a probable thymus hyperplasia, although a retrosternal thyroid was also considered. The lungs were normal.

Case 4.—H. V., aged 14 years, a sister of the foregoing patient, had had the cutaneous disease in mild form since she was 1 year old. With the exception of a diffuse goiter, large tonsils and a geographic tongue, examination was negative. Another younger child was examined, but presented no evidence of cutaneous disease, and the mother was likewise unaffected.

Laboratory Findings.—The blood findings in Cases 2 and 3 were: an average hemoglobin estimation of 95 per cent.; leukocyte count, 6,500; red blood count, 5,200,000; differential count: polymorphonuclears 77, small mononuclears 19, large mononuclears 3 and eosinophils 1. The blood pressure in Case 2 was: systolic 115, diastolic 85; in Case 3: systolic 110, diastolic 85. Chemical examination of the blood in Case 3 showed a total nitrogen content of 2,560 (normal 2,650), urea nitrogen 9.6 (normal 10), urea 23.5 (normal 21.4), uric acid 1.9 (normal 1.8), and creatinin 1.4 (normal 1.35). The urine findings were negative in all cases.

Cutaneous Lesions.—The eruption in all three children was so strikingly similar that a single description will suffice. The scalp showed a diffuse redness with branny desquamation. The hair was not excessively dry, and there was no alopecia. The cheeks, forehead, nose and ears showed a shiny seborrheic type of inflammation with exaggeration of the lines of the skin. On palpation the affected skin was thickened, inelastic and rougher than normal.

The lower lid in one case (Case 2) was slightly everted. At the lower border of the neck the erythroderma terminated abruptly in a sharply demarcated border. There were a few small scaly lesions over the upper part of the chest, but otherwise the trunk was free. The arms presented variously sized scaly,

Fig. 2.—Lesions on extremities of patient in Case 2.

grayish-red plaques of a psoriasiform appearance, chiefly affecting the exterior surfaces around the elbows. On the wrists and back of the hands were rough erythrodermic patches made up of scale-covered conical papules, some of them pierced by hairs, with marked exaggeration of the normal lines. In only one of the cases (Case 2) were found the "black" punctiform plugs which are so

characteristic of the disease. These were present on the dorsal surface of the wrists and to a lesser extent on the phalanges. The palms showed a diffuse thickening. The nails were not affected. The lower limbs presented confluent scale-covered patches with islands of normal skin intervening. The nutmeg

Fig. 3.—Distribution of lesions of patient in Case 3.

grater feeling was very apparent on palpation. The knees, thighs and buttocks presented oblong, irregular plaques. Below the knees, extending over the dorsum of the feet, the scaling and roughness was more marked and suggested an ichthyosis. The soles showed a diffuse hyperkeratosis with numerous fur-

rows. The toe nails were thicker than normal. The eruption was everywhere remarkably symmetrical. The shiny seborrheic inflammation on the face was in marked contrast to the dry psoriasiform type of eruption on the extremities.

Clinical Course.—The patients were under observation over a period of several years and always showed spontaneous improvement in the summer months. The results of treatment will be recorded in a subsequent paragraph.

HISTOPATHOLOGY

Pieces of tissue were obtained from the back of the hands in Case 1 and from the psoriasiform areas in Cases 2 and 3. In addition, sections from a recent generalized case of the disease were studied. Hematoxylin and eosin, polychrome methylene blue, and Alzheimer's stains were used. The histologic appearances in all cases were similar and corresponded to those reported by other observers. The most conspicuous feature of the histology was the marked hyperkeratosis, chiefly around the mouths of the pilosebaceous follicles. The stratum corneum was greatly thickened, particularly in the older lesions and was composed of wave-like parallel laminae. The horny layer passed without interruption into the cylindrically or conically dilated mouths of the follicles and there formed onion-like concentric pearls, within which were found stumps of hairs. These colorless cornified globular pearls may occur in the epidermis doubly, apparently independently of the sebaceous or coil ducts. There were some distinctly nucleated cells in the horny layers (parakeratosis). The other layers of the epidermis showed a variable degree of hypertrophy. The rete pegs were lengthened in some sections, widened in others, and the basal layer stained more intensively than normal. Cutis changes were found in all sections and consisted of a cellular infiltrate in the papillary and subpapillary zones, chiefly about the affected follicles, and at times with a perivascular arrangement. The cells were mostly round deeply staining mononuclear fibroblastic spindle cells, and there were a few mast cells. The arrectores pilorum were markedly hypertrophic. The deeper parts of the coil and sebaceous glands showed no changes.

The conclusion I would arrive at from a study of recent papules and older ones is that the histologic changes differ only in degree. It is not possible to say whether the primary changes are in the epidermis or whether these are secondary to the inflammatory changes in the corium.

COMMENT; SUMMARY OF PERTINENT LITERATURE

The interesting features of this group of cases are the obvious hereditary and familial tendency, the remarkable similarity of the eruption as regards distribution and certain atypical features, the mild but persistent character of the disease in the second generation, the tendency to exacerbation in the winter months and the absence of sub-

jective symptoms. In the literature I have been able to find two reports of familial pityriasis rubra pilaris. De Beurmann, Bith and Henyer [4] report a group of four cases, two brothers, aged 23 and 25 years, and two sisters, aged 28 and 12 years. They all showed the typical pityriasic lesions on the body; a shiny uniform redness and slight desquamation of the face, hyperkeratosis of the palms with epidermal cones on the forearm, dorsal surfaces of the hands and fingers and similar lesions on the legs and feet. The nails

Fig. 4.—Section through horny spine on dorsal phalanges, showing mass of cornified epithelium within hypertrophied follicle.

were thick, brittle, thin at the edge and had longitudinal cracks in them. The sebaceous secretion on the face, scalp and thorax was intense, while the limbs, on the contrary, were very dry. These characteristics were present in all. In the study of the hereditary antecedents the father was found to have had for years a redness and scaliness of the face. The mother had no cutaneous affection and two other members of the family were not affected. There was a definite history of

4. De Beurmann, Bith and Henyer: Ann. de dermat. et syph., 1910, p. 609.

tuberculosis in the family. Recently Gaertner [5] reported a case of pityriasis rubra pilaris in a man of 29, beginning at the age of 3 years. The father had a similar affection from the fifth year to his death at 81. Gaertner would classify the disease as a congenital anomaly of cornification belonging to the so-called "universal genodermatoses" of Meirowsky, in which the "Keimplasma" is the determining factor. The familial tendency in pityriasis rubra pilaris is, however, not as

Fig. 5.—Section showing corneous plug with embedded hair in dilated pilosebaceous orifice.

marked as in such diseases as ichthyosis, porokeratosis and keratosis follicularis, but is probably more like the occasional familial tendency seen in such diseases as psoriasis.

DIFFERENTIATION FROM OTHER TYPES OF PITYRIASIS RUBRA PILARIS; RESEMBLANCE TO PSORIASIS

Pityriasis rubra pilaris, as described in the present group of cases, differs from the more severe cases originating in childhood and the

5. Gaertner: Arch. f. Dermat. u. Syph. **129**:479, 1921.

acute cases occurring in adults. I have had under my care three additional cases of a much more severe type, one in a child and two in adults. In the latter, the eruption at the onset consists of discrete conical papules. By close aggregation and new formation of papules, hyperkeratotic scaly patches are produced closely resembling psoriasis. The eruption rapidly becomes universal, the erythroderma and profuse scaliness suggesting an exfoliative dermatitis. After partial involution

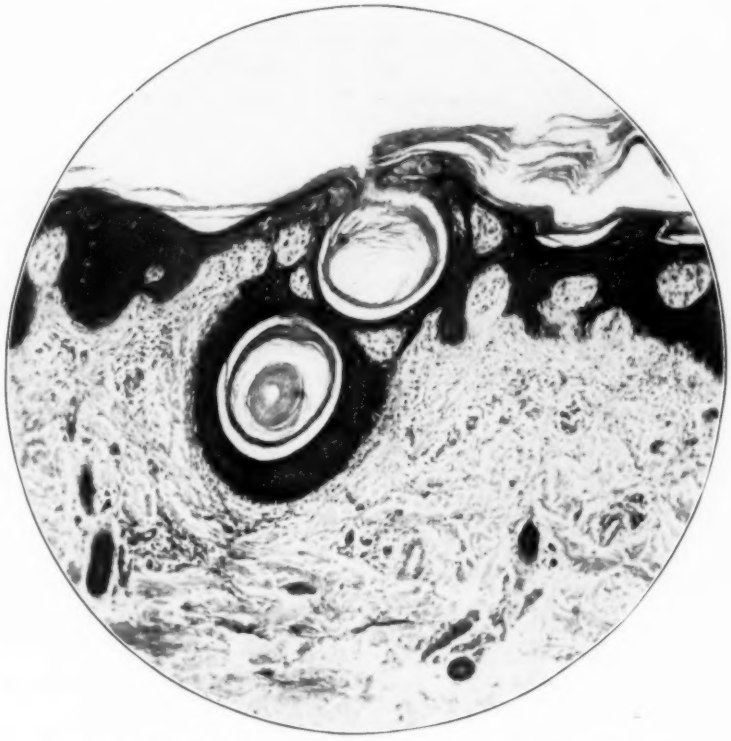

Fig. 6.—Section showing double horny pearl in epidermis.

there remains a residual eruption located chiefly on the face and scalp, elbows, knees, axillae, genital region, popliteal space, sacral region, hands and feet. In these severe cases the nails show remarkable changes. The nails of both hands and feet become opaque, thickened, transversely striated and pushed upward by an enormous subungual hyperkeratosis. The distal end of the nail shows a grayish-yellow discoloration, is lifted up by a friable subungual deposit and has a tendency to curvature in a longitudinal direction, resulting in a claw-like deformity. The palmar and plantar hyperkeratosis may be so severe as seriously to interfere with the use of the limbs. The hands are often

swollen and deformed with a feeling as if they were incased in a cast, as one patient expressed it. The black "plugs" on the dorsal phalanges and backs of the hands are regularly found in these cases. The preceding observations agree with the nail changes as reported by Heller,[6] Friedmann,[7] Dubreuilh and Riecke. In contrast to this is the

Fig. 7.—Plantar hyperkeratoses with nail changes in a severe case of pityriasis rubra pilaris.

absence of nail changes in the familial type of disease, the freedom of involvement of the trunk and the inconspicuous nature of the follicular papules on the backs of the hands. I believe we must therefore recognize that pityriasis rubra pilaris may occur as both a mild familial

6. Heller: Die Krankheiten der Nägel, Berlin, 1900, p. 143.
7. Friedmann: Arch. f. Dermat. u. Syph. **135**:161, 1921.

type and a more severe acquired form. It may be recalled in this connection that Thibièrge has already emphasized the multiformity and variability in the clinical aspects of pityriasis rubra pilaris. The resemblance of the lesions to psoriasis is worth commenting on from the standpoint of differential diagnosis. The silvery white scales covering the plaques on the elbows and knees strikingly resemble psoriasis. Careful inspection and palpation will, however, disclose acuminate papules. The absence of bleeding points on removal of the scales, and the palmar and plantar changes will be of value in the differentiation.

RELATIONSHIP TO ENDOCRINE GLANDS

The etiologic relationship of pityriasis rubra pilaris to endocrine glands is suggested by the favorable response to medication with such glandular extracts as thyroid and pituitary and the occasional association with symptoms of endocrine disturbance. Levin has demonstrated a number of cases before the Manhattan Dermatological Society which showed signs of dyspituitarism and which improved under the administration of pituitary substance. Bechet [8] mentions a male adolescent with a classical pityriasis rubra pilaris who had a typical Fröhlich syndrome characterized by excessive adiposity, deficient sweat, dry skin and dry, strawlike hair. There was slight improvement in the eruption after administering pituitary extract. The relationship to the thyroid gland is equally obscure as many cases which present no sign of a pathologic condition of the thyroid improve with the administration of thyroid extract. Levin and Smith [9] report an interesting case of pityriasis rubra pilaris with symptoms of hypothyroidism in a male adult with apparent cure by thyroid therapy. In this case they record the following symptoms: dull, stupid facial expression with minor mental changes; marked evidence of senility; sparseness of the eyebrows and absence of the outer half; relaxation of ligaments; poor muscular tone; slow pulse; extreme constipation; dry scaly, itching skin, and chilliness. The thyroid gland was not palpable. They urge the administration of thyroid extract in cases with minor symptoms of hypothyroidism as a valuable therapeutic test and even when thyroid symptoms are not present for its effect in improving the nutrition of the skin, increasing its glandular activity, stimulation of hair growth, and enhancing the desquamation of the unhealthy horny layer with reproduction of a new covering. These conditions are present in pityriasis rubra pilaris and also account for the beneficial effect of

8. Bechet, P. E.: The Dermatologic Symptoms of Endocrine Dysfunction, Arch. Dermat. & Syph. **4**:660 (Nov.) 1921.

9. Levin and Smith: Pityriasis Rubra Pilaris: Report of a Case Cured by Thyroid, Arch. Dermat. & Syph. **3**:40 (Jan.) 1921.

thyroid in ichthyosis and allied conditions. In my series of seven cases I was able to find definite evidence of hypothyroidism in only one, although the improvement in the cutaneous condition under thyroid administration in all was marked. In one of the unusually severe cases of pityriasis rubra pilaris under my care at the Cook County Hospital, which rapidly became generalized under treatment with arsenic (sodium cadodylate injections) and had assumed a type resembling exfoliative dermatitis, there was remarkable improvement under treatment with thyroid extract. The desquamation and erythroderma over the trunk cleared almost entirely leaving only a few areas present on the elbows, knees and scalp. The hyperkeratotic condition of the palms and soles improved slowly under treatment. A roentgen-ray examination of the chest in this case showed no pathologic condition, and the sella turcica was normal in outline. The basal metabolic rate was within normal limits. After taking 1 grain (0.06gm.) of thyroid three times a day for four weeks, definite symptoms of hyperthyroidism presented themselves—a marked tremor, eye symptoms and rapid pulse, necessitating discontinuation of the treatment. Thyroid extract should therefore be administered with care, and, if possible, controlled by basal metabolism tests. Regarding the possible presence of an enlarged thymus in one of my cases, I am inclined to look on this as an accidental finding. Interest in the association of the thymus gland with another dermatitis, psoriasis, has been aroused by Brock's hypothesis that there is a hypofunction of the thymus in this disease and the attempt to stimulate this by small doses of roentgen-rays.

Recently the patient mentioned in the foregoing received a stimulating dose of roentgen-ray over the thymus area, with continued improvement.

RELATIONSHIP TO TUBERCULOSIS

In 1901, Milian announced the theory of the tuberculous origin of pityriasis rubra pilaris, which was based on the great frequency of tuberculosis in the patients observed by him, the existence of intermediary cases between certain tuberculids and pityriasis rubra pilaris and the positive tuberculin reactions. Milian would consider the disease as a perifollicular tuberculid. Gaucher has also found that several patients treated by him for pityriasis rubra pilaris succumbed to tuberculosis. De Beurmann obtained a definite history of tuberculosis in the family studied by him. All of the members gave positive tuberculin reactions. The father had repeated attacks of bronchitis, and in one of the children the right apex was affected. Other observers have not been able to confirm these observations. In the four cases described in this report, nothing was found to indicate the presence of tuberculosis. The Pirquet tests were negative and physical and roentgen-ray evidence was lacking. Even in the patient who had had the disease

for twenty years there was no impairment of health. The theory of the tuberculous origin of the disease appears to rest on indefinite evidence.

THERAPEUTIC OBSERVATIONS

In the series of cases that I have had under observation the greatest amount of improvement was noted with thyroid therapy. Small doses of thyroid, 1 grain three times daily (0.06 gm.), were effective in controlling the disease but failed to effect a complete cure. Possibly better results will be secured with Kendall's thyroxin. My experience with other endocrine substances was not so favorable. Arsenic, as solution of potassium arsenite, Asiatic pills and sodium cacodylate, appeared to aggravate the condition. In contradistinction may be mentioned the results of Kaposi, who cured some of his patients with heroic doses of arsenic, and Heidingsfeld who managed three cases successfully by the administration of intestinal antiseptics, a carefully regulated diet, the external application of tar and the hypodermic administration of arsenic in the form of atoxyl, or cacodylic acid. Pilocarpin, a remedy formerly much used, I have had no experience with. Diet has not influenced the course of the disease. Locally, I have found the free use of baths followed by some mild emollient, such as benzoinated lard or lanolin, better then stronger keratolytic or reducing agents. The careful use of the roentgen ray appears to aid in the involution of the lesions. The disease in my experience improves up to a certain point, but becomes refractory to further roentgenization.

CONCLUSIONS

1. Pityriasis rubra pilaris may occur as a hereditary, familial disease.

2. The familial type of disease represents a mild persistent dermatosis beginning in early life and presenting atypical features resembling psoriasis.

3. The disease is occasionally associated with evidences of endocrine gland disturbance.

4. There is no evidence of a relationship to tuberculosis.

5. Thyroid extract is the most valuable therapeutic agent in controlling the disease.

ABSTRACT OF DISCUSSION

Dr. Richard L. Sutton, Kansas City, Mo.: The point Dr. Zeisler brought out regarding an occasional familial tendency in this disease should be emphasized. In chronic skin diseases of doubtful etiology, one should be careful in giving advice regarding the probable freedom from inheritance of the offspring. In this instance, the patient undoubtedly blamed the physician who had told him that there was no danger of his children contracting or inheriting the disease. A few years ago, I was consulted by a patient with a large and

unsightly birthmark, who wanted to know if it would be safe for him to marry and beget children. I told him that the condition sometimes was an inherited one. The first (and thus far only) baby had a disfiguring birthmark, similar to the one carried by the father.

DR. HAROLD N. COLE, Cleveland: I saw one of the patients Dr. Zeisler referred to when she was in Cleveland, and she had a characteristic case of pityriasis rubra pilaris.

DR. DAVID LIEBERTHAL, Chicago: I do not believe Dr. Zeisler is to be criticized for not advising against marriage. So far as I know, the first patient was married twenty years or more ago, and at that time Dr. Zeisler was not in practice and none of us had all the information we have gained since that time in regard to this and many other diseases.

DR. WILLIAM ALLEN PUSEY, Chicago: These facts were not known to many of us before. I am glad to learn that the affection is familial, and the opinion of Drs. Sutton and Lieberthal makes little difference.

DR. ERWIN P. ZEISLER, Chicago, closing: I believe my paper emphasizes the point that care should be exercised in permitting patients with chronic dermatoses to have children. Even such disorders as psoriasis are occasionally hereditary, and patients should be informed of this fact.

30 North Michigan Avenue.

EXPERIMENTAL PRODUCTION OF PARAFFIN OIL TUMORS IN MONKEYS*

FRED D. WEIDMAN, M.D., AND MARJORIE S. JEFFERIES

PHILADELPHIA

By this time, the medical profession has become thoroughly aware of the danger which lurks in the surgical use of paraffin for cosmetic purposes, but, although by now almost an old story, the discussion pro and con still goes on. Thus, one of the most recent pronouncements is that of Davis,[1] who concluded that for paraffinomas to develop in the skin there must be a predisposition on the part of the patient, since the majority of people into whose skins paraffin is injected do not develop paraffinomas. (The reader must keep in mind that we are speaking now of solid paraffin and not paraffin oil.) He concludes, on the other hand, that "the affliction is common enough to clothe the procedure of paraffin injection with a distinct risk," and that occasionally even epithelioma may develop. Oppenheimer,[2] too, has voiced a condemnatory note. On the other hand, an Englishman, Spencer Mort,[3] extols the use of paraffin in facial surgery, stating that the results will be favorable if a very pure grade of paraffin is used, with a melting point of from 110 to 115 F.

The first impression is that Mort was very fortunate in not encountering any persons who were predisposed, and that the employment of paraffin as a cosmetic agent will depend on how much of a gambler the physician as well as the patient is. For, obviously, since the tumors develop in only a small percentage of cases, often only after many months, and since surgeons cannot follow up every patient whom they do so treat, the surgeon will be able to dogmatize only after he has treated many indeed, say some scores of cases. But now that we know what we do about paraffin oil, it may be that, as Mort states, the elimination of the lower fractions of the paraffin (which are the ones related to the paraffin oils) will also eliminate the development of tumors. It may be fairer to reserve final judgment until hard paraffin has been definitely incriminated, but, in view of the tissue reaction, which is that of a nonspecific foreign body, we believe that it will finally be shown that the introduction of any foreign body will be

* From the Laboratory of Dermatological Research, Department of Cutaneous Medicine, University of Pennsylvania.

1. Davis, B. F.: Paraffinoma and Wax Cancer, J. A. M. A. **75**:1709 (Dec. 18) 1920.

2. Oppenheimer, S.: Laryngoscope **30**:595 (Sept.) 1920.

3. Mort, S.: Lancet **2**:105 (July 19) 1919.

followed by an order of this "tumor" reaction, provided the person's tissues are thus disposed; and that this will take place regardless of whether the inert body is pure hard paraffin, soft paraffin, paraffin oil, celloidin or cellulose.[4]

Coming to the subject of paraffin oil tumors, we find that, as the parenteral use of oil is so much more recent than that of paraffin, the dangers from its use have not become so generally or so widely known. And, therefore, it is much more important to human medicine that the dangers of these injections be known than that those of solid paraffin be known, not only because they are practiced so much nowadays, but also because they are likely to be more widely used as parenteral injections are employed more and more in the future.

This danger we have[5] attempted to advertise directly to the profession in a recent note. Stokes and Scholl,[6] DuBois,[7] Cole and others[8] have done the same, as they reported cases in which tumors developed variously from subcutaneous or intramuscular injections of the oil. And there are objections from other directions, for Rost,[9] experimenting on guinea-pigs, asserts that impure paraffin oil is poisonous when injected intraperitoneally, and notes necrosis as having occurred in human beings after mercuric salicylate injections in such oil. It is encouraging that the warning has now appeared in Sutton's textbook[10] on diseases of the skin, but it should extend beyond the narrower realm of dermatology and be brought close home to every practitioner.

We, therefore, feel justified for this communication: (1) to continue the campaign against the use of paraffin oil injections; (2) to collate more or less the scattered data which appertain to the subject, and (3) to report certain experimental work which will confirm previous clinical ideas and round out the chain of evidence against use of the oil.

REVIEW OF LITERATURE

It may have been as far back as 1913 that the first untoward effects were recorded in connection with paraffin oil injections, although they

4. We have seen foreign body giant cells and granulation tissue develop around strips of celloidin introduced into the cranium for drainage purposes, and around gauze experimentally placed in the abdominal cavities of guinea-pigs. Other instances are too well known to require repetition.

5. Weidman, F. D.: Camphorated Oil Tumors, J. A. M. A. **78**:58-59 (Jan. 7) 1922.

6. Stokes, J. H., and Scholl, A. J., Jr.: Probable Paraffin-Oil Tumor, Arch. Dermat. & Syph. **4**:50 (July) 1921.

7. DuBois: Tr. Schweiz. derm. Ges., Zurich **7**:10-11, 1920; Schweiz. med. Wchnschr. **51**:136, 1921.

8. Cole, H. N.; Littman, Sidney, and Sollman, Torald: Study of Mercury Injections by Means of Roentgen Ray, J. A. M. A. **75**:1559-1562 (Dec. 4) 1920.

9. Rost, E.: Med. Klin. **17**:35-36, 1921.

10. Sutton, R. L.: Diseases of the Skin, Ed. 4, St. Louis, C. V. Mosby Company, 1921, p. 812.

were not referred at that time to the oil itself but to the active agent in it. At that time, Hazen,[11] among others, was testing the possibility of administering arsphenamin by the intramuscular route. He used paraffin oil as the vehicle and reported adversely on account of tardily developing abscesses. The oil was naturally unsuspected at that time, in view of the concomitant presence of such an agent as arsenic; nor can we even today unequivocally indict the oil, for the recent paraffin oil tumors have never exhibited features acute enough to have been mistaken by Hazen for abscesses.

The two Freniet brothers [12] appear to have been the first to have described paraffin oil tumors (1917). They reported that the incubation period was several weeks, occasionally eighteen months or even as long as two years. Even an abstract of their detailed speculations as to the mechanism of the tumor production would be beyond the scope of this communication. Among other things, they mention impurities in the paraffin oils and individual hypersusceptibility.

Mook and Wander [13] very shortly thereafter reported one of a series of six cases which they had observed. The tumors developed in the arms after an attack of influenza. These observers emphasized strongly that paraffin oil should not be used subcutaneously, nor as a vehicle for mercurials.

Following these, Letulle and Alglave [14] described a case in a soldier who had received injections during typhoid fever. The buttocks contained such numerous and confluent tumors that they were not amenable to surgical excision. Their second case concerned a 5-year-old tumor in a woman who had received camphorated oil during puerperal fever. A third case was one of multiple tumors of the breast which had been present for sixteen years. The nature of the oil injected was unknown. In discussing this paper, Balzar stated that he was very much opposed to the use of oil for subcutaneous or intramuscular injections, and that, whereas few people were susceptible to tumors, he thought that those few were tuberculous. In this connection, we wish to report that neither of our monkeys was tuberculous (necropsy findings).

In DuBois' [7] patient, the tumors appeared three months after the injections in the arm, following which the lymph nodes became hard but not tender. DuBois remarks in passing that injections of mercury in paraffin oil sometimes produce nodes in the muscles.

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11. Hazen, H. H.: Oily Injections of Salvarsan—A Warning, J. A. M. A. **60**:1618 (May 24) 1913.

12. Freniet, Jacob, and Freniet, Faure: Rev. de chir., 1917, Nos. 9 and 10.

13. Mook, W. H., and Wander, W. G.: Camphorated Oil Tumors, J. A. M. A. **73**:1340 (Nov. 1) 1919.

14. Letulle and Alglave: Bull. l'Acad. de méd., Paris **84**:9 (July 6) 1920; abstr. J. A. M. A. **75**:703 (Sept. 4) 1920.

In 1920, Cole, Littman and Sollman [8] conducted a set of experiments in regard to the rate of absorption of the various mercury preparations. At first, they used liquid petrolatum as the vehicle for their mercuric salicylate, but later turned to hydrous wool fat emulsion in order to avoid the dangers of paraffin oil tumors, which they evidently recognized. This, of course, refers to intramuscular injections.

Bivona's [15] case report is interesting because it concerned the scrotum. The patient had employed someone to induce this lesion in order to avoid conscription into the Italian army. He was unsuccessful in this, and had it excised when he contemplated marriage. Histologically, the picture was such as to lead Bivona to believe that paraffin oil or some related substance had been used to produce the tumor.

Most recently, Stokes and Scholl reported their case. It affected the upper part of the arm, and from it lines of tumor extended as though in lymphatic channels not only toward the axilla but also in a downward direction almost to the elbow. Their last word was a plea for medical publicity, lest the tumor be mistaken for tuberculosis or a malignant neoplasm.

There is thus ample accumulation of reported cases to show that, occasionally, the injection of paraffin oil is followed by the development of tumors which, while not as a rule painful, are large enough to be inconvenient and disfiguring. The treatment of choice has been surgical. However, in one instance, the lesion was so extensive as to preclude an attempt at removal, and, in another, there was recurrence because it was impossible to remove every trace of the oil collection. It was thought, in the latter case, that the oil globules had divided and subdivided repeatedly, extended outward into the tissues and stimulated the development of new tumors. In one or two cases, it has been reported that radiation benefited the tumor.

As to the basic nature of the process, there is no doubt that the lesion is a foreign body granuloma, and in no sense of the word neoplastic. The term tumor is misleading. The bulk of the tumor is but a hyperplasia of white fibrous connective tissue, of young type in the earlier tumors and old hyaline in the older ones. Scattered through this stroma are smaller and larger oil globules, and, on staining sections with sudan III, vacuoles are sometimes found to contain the oil. In frozen sections, the oil largely drops out, even when the tissue is fixed before freezing. Around the vacuoles, larger and smaller collections of endothelial cells may be seen, and giant cells of foreign body type are frequently intermixed. Necroses such as are seen in tuberculosis have not been met. Good photomicrographs may be found in Stokes and Scholl's and Freniet's article.

15. Bivona, S.: Policlinico (sez prat) **28**:854 (June 20) 1921.

ANIMAL EXPERIMENTAL WORK

While there seems no doubt that liquid paraffin was responsible for the tumors reported in the foregoing, we feel that it was not a superfluous piece of work to round out the evidence by experimental means any more than for Gelderin [16] to produce paraffinomas in the subcutaneous tissue of the dog. At the same time, we broached, in a small

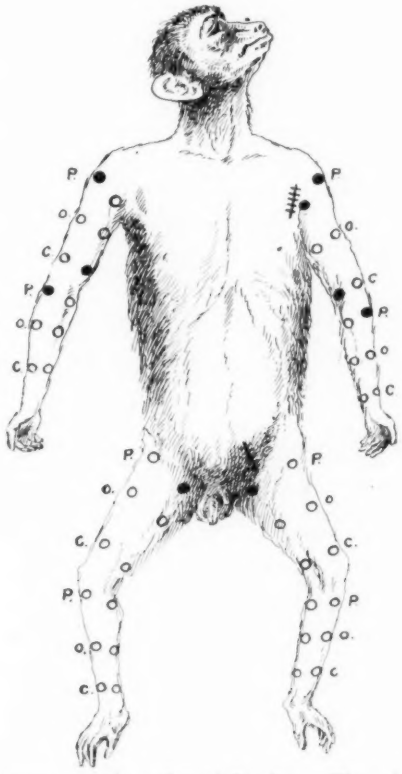

Fig. 1.—Result eleven months after injection. The circles indicate where the injections were made. Solid circles show where tumors developed; rings, no tumors; *C*, cottonseed oil; *O*, olive oil; *P*, paraffin oil. Two injections of the same kind of oil were made opposite each of the letters, plain oil mesially and the oil plus camphor laterally. The crossed lines on the left side indicate operative incisions to remove lymph nodes.

way, the question why some individuals were susceptible to the tumors and others were not.

Technic.—We have used three oils, paraffin, olive and cottonseed, arranged in two series. One series consisted of the pure paraffin oil

16. Van Gelderin, C.: Nederlandsch Tijdschr. v. Geneesk. **1**:946-951 (Feb. 19) 1921.

and the second of the oil plus camphor (10 per cent.). A preliminary set of experiments was conducted on guinea-pigs and monkeys, the injections being made into the shoulders, camphorated oil on the one side and plain oil on the other. In these preliminary trials, we obtained no positive results. In no case, as practiced on six guinea-pigs and three monkeys, did the experiments produce oil tumors, even after several months' (from eight to seventeen) duration.

This raised the question as to what accessory factor might be necessary to induce the tumor growth. We therefore anesthetized two monkeys and made multiple injections in all their extremities. The accompanying drawings will show where the injections were made. Tattoo marks were made on the skin for the purpose of identifying the precise points at which the injections were made. It will be observed that for injection purposes each half of the animal's body was divided into four parts; arm, forearm, thigh and leg. In each one of these four parts, the six oil combinations were injected, i. e., twenty-four injections on each side of the body. We followed the plan of injecting the cottonseed oil at the lowest position, olive oil in the middle, and the paraffin oil at the uppermost. The plain oils were injected on the mesial side of the extremities, and the same oil plus camphor opposite it on the external or lateral aspect of the limb. It thus came about that, in each of these six injections, the paraffin oil was uppermost mesially, while the camphorated oil was uppermost laterally.

In the case of one monkey, some of the axillary and inguinal nodes on one side were dissected out to create a possible disturbance of absorption. This animal will hereafter be referred to as the monkey which was operated on. The second monkey was not thus treated.

Results of Injections.—At the end of three months, tumors could be observed in several positions in both animals. They were more numerous but not larger in the monkey which was operated on. The animals were next observed eleven months afterward, and the positions of the tumors on the monkey operated on, plotted as in Figure 1. The first thing that stands out is that the operation on the lymph nodes had no effect on the development of tumors. There were practically as many on one side of the body as on the other. The second point is that out of forty-eight injections there were nine "takes," i. e., nine tumors developed. Of these nine, all but two were in the position of the paraffin oil injections; and there is no choice between the plain paraffin oil and the camphorated. The two are equally capable of producing tumors. As was expected, then, it is the paraffin oil and not the camphor content which is the responsible factor. The disturbing phase of the results was the appearance of tumors also at the site of the cottonseed oil injections near the elbow. We do not at this time propose to attempt to explain this. It would involve additional experimentation of rather extensive character.

The foregoing observations were made eleven months after injection. Seventeen months after injection the monkey which had been operated on was killed and examined postmortem, and the positions of the tumors were verified by dissection. The internal organs were examined, but no important changes were noted except in the lymph nodes, which will be described later.

As to the tumors, we found first that none had disappeared (Fig. 2). Secondly, a new set of tumors had developed, and, in addition, a chain

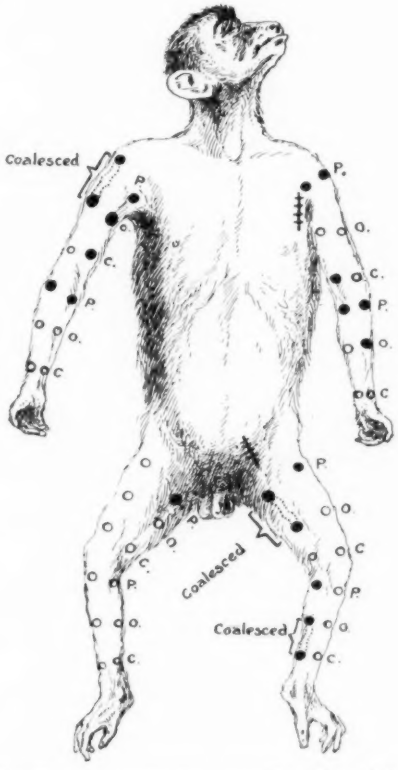

Fig. 2.—Result seventeen months after injection.

of nodules had extended in some instances from previously recognized tumors and had coalesced with other injection points. It appears from this that the paraffin oil may remain for as long as eleven months before inducing the development of tumors, and that, having once developed, extension may take place, giving rise to a chain-like mass of tumors.[17]

17. Stokes, J. H., and Scholl, A. J., Jr. (Footnote 6): Concerning tuberculosis and neoplasia.

From the negative standpoint, we must call attention to the fact that tumors did not develop in four of the sixteen points injected with paraffin oil. There were no swellings there and no paraffin oil on histological examination. This suggests that other factors than impurity of oil and individual hypersusceptibility must be concerned in yielding tumors. May it be that no tumors developed in those cases in which the needle opened up larger lymphatic channels and the oil had ready egress to regional lymph nodes? An unqualified explanation of this variability in "takes" is impossible at this time.

The foregoing facts had to do only with the monkey which was operated on. The animal whose lymph nodes were untouched also

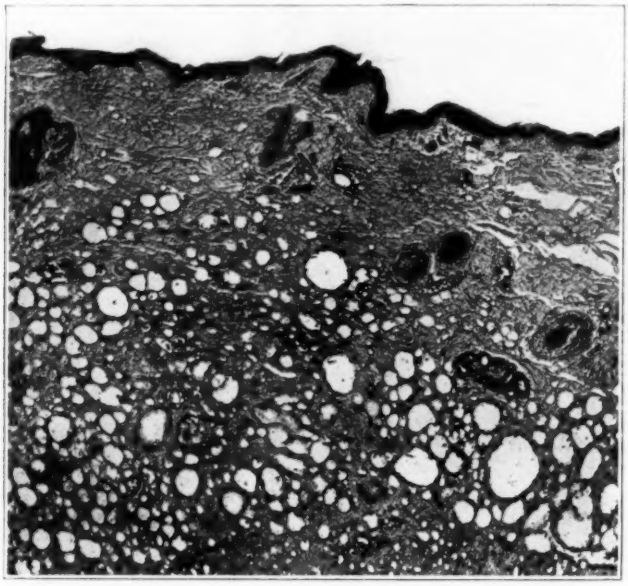

Fig. 3.—Eleven months old skin tumor; paraffin section; very low magnification.

developed several nodes, all at paraffin oil sites, and on both arms and legs. It was used and killed in another research and was not followed as was the monkey operated on, once the lesions had been produced and the noneffect of lymph node extirpation had been demonstrated on the monkey operated on.

MORBID ANATOMY

Tumors.—The 17-months-old tumors ranged in size up to 11 mm. in diameter, and were tightly adherent to the skin and the underlying muscle, rounded, never encapsulated and had a pale creamy color. None exhibited the brawny or purple color described for human cases. They were hard like wood; when incised they did not bleed notably, and no

oil characters could be predicted from naked eye examination of the cut surface. The cut surface was homogeneous and pale creamy white like the exterior. We saw no necroses.

Under the microscope, the changes were encountered that have been already so thoroughly described for human cases. That is, in peripheral, presumably younger, parts of the tumor there was the same sort of young fibrous stroma and lymphocytic infiltrate in which the giant cells

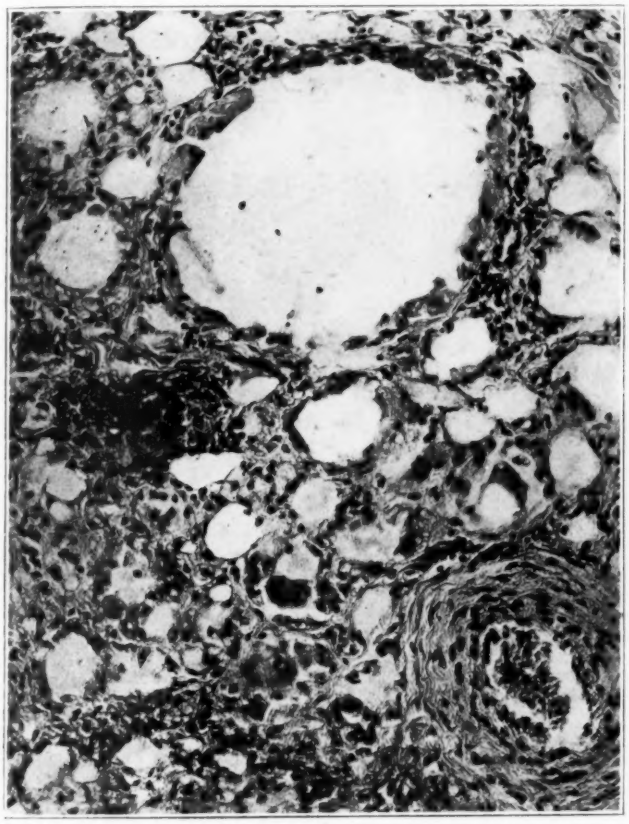

Fig. 4.—Eighteen months old skin tumor; peripheral, younger portion; more highly cellular than in Figure 5; globules smaller; numerous giant cells.

of various sizes were placed. Some of the latter contained fat globules; others did not. The yet larger spaces have also been seen, more or less surrounded with endothelial cells or by narrow, more or less perfectly formed giant cells. It has been our experience, in staining by sudan III, that the original fat globules of the subcutaneous fatty areolar tissue tend to remain in the spaces more nearly constantly than does the paraffin oil. For the most part, the latter appears to have run out dur-

ing the process of cutting the frozen sections; whereas that in the areolar tissue has remained. For this reason, it is better to work with thick sections, at least 0.05 mm. thick. The two kinds of fat may be distinguished in several ways. First, the normal fat can often be recognized by being gathered in the usual lobular aggregations, and by its uniformly large globules. In the second place, the paraffin oil takes a less decided color with the sudan III than does the normal subcutaneous fat. In the third place, the presence of endothelial cells will serve certainly to betray the paraffin oil wherever such cells are present. Of course, the extremely large spaces could represent nothing other than paraffin oil—not the normal subcutaneous fat. There were no abnormal changes whatsoever in any epidermal cells in any of our sections.

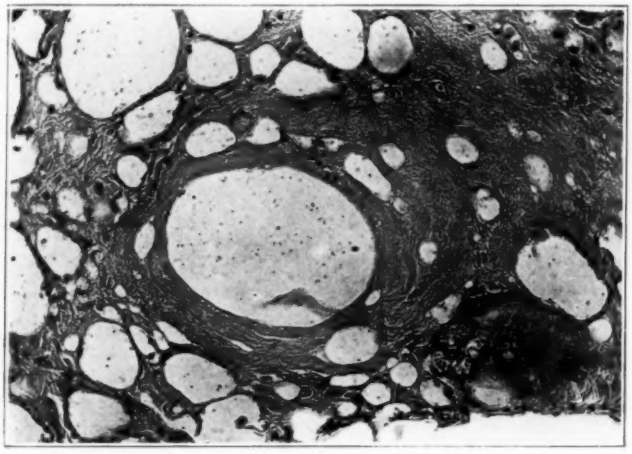

Fig. 5.—Eleven months old skin tumor; central, older portion with old fibrous tissue around the oil globules; paraffin section.

In the central parts of the tumor, the oil spaces were larger, and the surrounding fibrous stroma was of dense hyaline type. Giant cells and lymphocytic infiltrates were scarce here.

Lymph Nodes.—A further finding whose value in relation to paraffin oil is somewhat discounted because three different oils were injected into the one monkey, lay in the fact that oil was found in the lymph nodes. At necropsy, the axillary, inguinal and submental nodes were moderately enlarged but never adherent to the surrounding areolar tissue. They were easily dissected out and were of normal consistency. Whereas some of them appeared normal to the naked eye, others, both externally and in the section surface, exhibited patches somewhat resembling a frog's lung. That is, they were pale creamy white, and closely dotted with submerged translucent, watery spheroids. In some

instances, the whole node was thus transformed, but generally the fatty areas were restricted to one part of the node. It is curious that, in a given cluster of inguinal nodes, one node should be very heavily infiltrated with oil; whereas continguous ones were sparingly so or not at all. Portions of these areas placed fresh under the microscope were found to consist almost entirely of oil globules, and these globules became the proper pale color when sudan III was applied, but not the same black with osmic acid that olive and cottonseed oil controls did. Certainly the oil was paraffin oil. The spongy appearance was not recognized in the abdominal nodes. The submental nodes contained no oil on microscopic study. The enlargement of the latter was referable to a lymphoid hyperplasia.

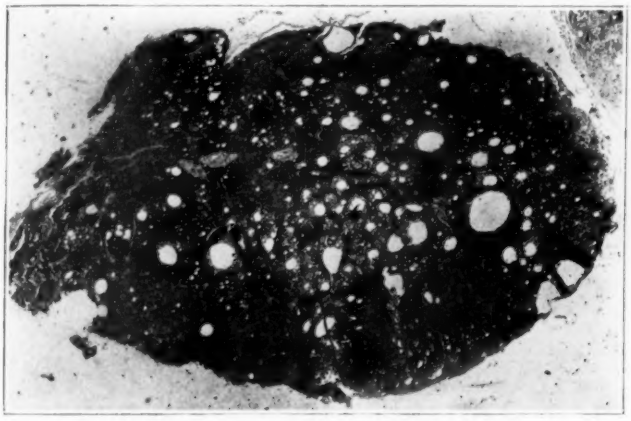

Fig. 6.—Right inguinal lymph node seventeen months after injection: very low power; oil mainly in medulla; paraffin section.

In sections, the nodes exhibited globules of various size, from the most minute intracellular ones to those which could be seen with the naked eye as the slide was held to the light. They were located for the most part in the medulla with a few in the cortex and none in the cortical follicles. The lymphocytes adjacent to the larger vacuoles were crowded together as though by an expansive effect of the oil. Otherwise, the oil features were of the same type as those described in the young skin tumors, some surrounded more or less by endothelial cells or giant cells, others phagocytized by such cells. We wish to emphasize that the fibrosis and lymphocytic inflammatory infiltration of the skin tumors has most singularly never been repeated in any of the lymph nodes. It appears that the lymph node was but passively accepting and storing the oil. Certainly the only hint of reaction was the hyperplasia of endothelial cells necessary to the act of phagocytosis or encapsulement.

These phenomena show that the paraffin oil must metastasize; i. e., we have an oil embolism of lymphatics. Both of the animals had cage palsy (osteomalacia), and had been splenectomized in another research several years previously, but it is not likely that either of these circumstances played a part in the oil phenomena, in view of the microchemical tests showing that it was paraffin oil that was at fault. We cannot explain why the oil should provoke fibrosis in the skin and not in the lymph nodes. It would be interesting to try injections directly into the spleen.

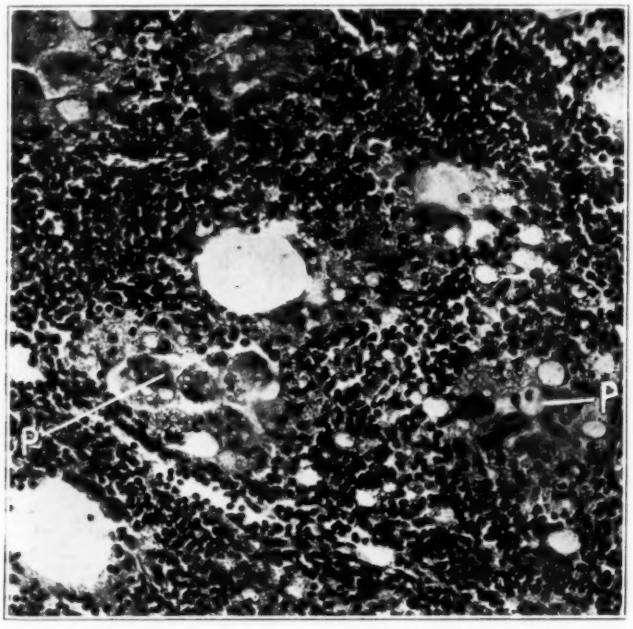

Fig. 7.—Lymph node; high power; paraffin section; no fibrosis; large oil globules partly surrounded by endothelial cells; *P*, phagocytosis of smaller and larger oil globules.

We have also tested the tumors which developed at the site of the cottonseed and the olive oil injections (Fig. 2) as to the kind of oil they contain, by crushing teased portions on glass slides, staining with osmic acid and examining under the microscope. In every instance, globules were found which did not blacken with osmic acid as others did in the same preparations. The latter served the useful purpose of a control, and were to be expected as coming from the normal subcutaneous fatty tissue. In the case of tumors too small to allow the gross extraction of bits, frozen sections were resorted to and confirmed the coarser results, i. e., osmic acid-negative globules were found between the osmicated normal fat globules.

Fig. 8.—Frozen section; tumor at cottonseed oil site in leg; purposely thick and overstained to bring out unstained (paraffin oil) globules at *P* against large, solidly stained normal subcutaneous fat globules at *N;* stained by osmic acid and hemotoxylin, watery mount.

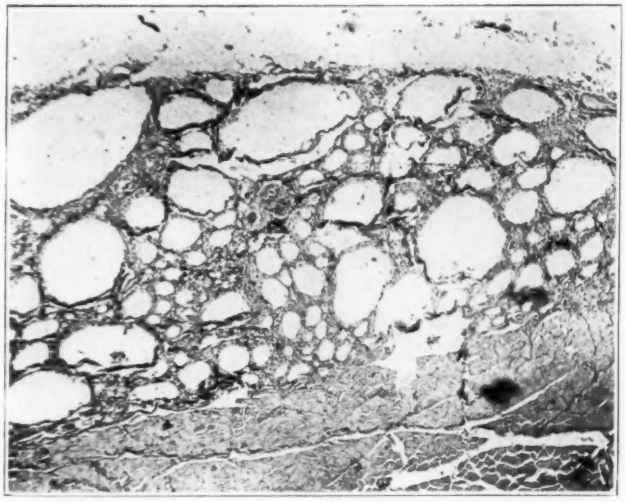

Fig. 9.—Oil in fascia of muscle near inguinal lymph node.

These findings make it appear that neither olive nor cottonseed oil, although injected (each) in sixteen places in one monkey, were capable of producing tumors. But, as intimated earlier in this paper, our position is weaker because several different kinds of oil were used.

INGUINAL LYMPHATIC SPACES

When dissecting out the inguinal lymph nodes at necropsy, the tissue over the underlying muscle appeared pale and mushy. Sections of the muscle and overlying mushy substance disclosed vacuoles, large and small, in the fascia over the muscle, but not within the muscle. The type of reaction was the same as that in the lymph nodes; not the frank one of the skin sections. The vacuoles were surrounded by endothelial and giant cells, with practically no intervening fibrous hyperplasia.

SUMMARY

Although the subject is but 5 or 6 years old, it has now been shown beyond a doubt that the subcutaneous or intramuscular injection of paraffin oil as a vehicle is attended with the danger of subsequent tumor formation. Tumor formation is not dependent on the technic of the injection, but probably on individual predisposition.[18]

To protect the patient and himself, the physician should insist that, if a proprietary preparation is used, it shall be specified that no mineral oil is employed as the vehicle.

Clinically, it has been found that the tumors undergo metastasis toward lymph nodes, or even extend distally—"retrograde metastasis." Under these circumstances, they simulate tuberculosis or malignant tumor. The tumors have substantially the same histologic characters as the better known paraffinomas.

We have shown, experimentally, on monkeys that paraffin oil will produce tumors at the site of injection by inducing a foreign body granuloma (twelve "takes" in sixteen injection points). The oil may then be transported by lymphatic channels to regional lymph nodes and be there deposited. They do not always induce granulomas en route nor did they ever induce inflammatory reaction in the lymph nodes. Olive and cottonseed oil appear, contrariwise, to be innocuous.

To the well-known oil embolism of the blood circulatory system, the general pathologist should now add that of the lymph vascular system.

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18. Compare Davis, B. F., Footnote 1, and Freniet, Jacob, and Freniet, Faure, Footnote 12, for details.

TUMOR FORMATION AFTER INJECTION OF MERCURIC SALICYLATE IN VEGETABLE OIL

WITH CASE REPORT

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Owing to asepsis and the selection of the less irritating mercury salts, nodosities following the deep injections of mercury are rather rare. When they do occur they are due to: (1) the use of mineral oil as a vehicle for the salt; (2) reaction from the presence of the mercury, or (3) traumatic gummas.

Fig. 1.—Although the injections were made high in the buttock, the suspension seems to have obeyed the law of gravity.

By far the greatest number of nodular lesions at the site of puncture are due to the use of mineral oil as a vehicle for the mercury. In spite of the wide publicity that has been given the dangers from its use, liquid petrolatum still enjoys a dubious popularity. When severe local reactions follow the intramuscular injection of mercury in vegetable oil, it is conceivable that the element itself is at fault, or that the result-

ing lesions are expressions of allergy and are, therefore, traumatic gummas. The nature of the reaction can be ascertained from the clinical picture and from examination of the oil, and by an early roentgen-ray examination and by biopsy.

Fig. 2.—Picture taken four days after the eighth injection.

REPORT OF A CASE

Clinical Aspect.—Deep in both buttocks were scattered well-defined infiltrated nodules, from 3 to 6 cm. in diameter, which were a cold red. There was no local heat nor tenderness. The nodules were solitary and were not connected by chains of smaller nodules as in the case of probable paraffin oil

tumor reported by Stokes and Scholl.[1] Over the sacral region was a poorly defined patch of brownish pigmentation. Biopsy was refused, but a roentgenogram revealed shadows on the site of the last injection, corresponding slightly to those of gray oil, published by Cole and others.[2]

Physical Examination.—The patient was a young man in robust health. He was entirely normal except for a general glandular enlargement. A serum Wassermann test was strongly positive and there was a faint trace of albumin in the urine.

Examination of the Medicament.—The oil was centrifuged out. It was optically different from mineral oil, reacted with osmic acid and was not rancid. The preparation was linseed oil with mercuric salicylate suspended in it, so that 1 c.c. represented 1 grain (0.065) of the salt.

History.—The patient was seen through the courtesy of Drs. A. R. and A. M. Rogers. He had acquired syphilis three years previously and had received eight injections of the preparation, the tumors appearing in slight degree after the sixth. All injections were made high up in the hip, the suspension evidently working downward along the fascia of the glutei. At no time were there any symptoms of salivation, nor was there any pain in the buttocks.

Treatment.—The injections were stopped as soon as the reaction became obvious, but the tumors slowly increased in size. Hot sitz baths and massage were recommended.

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1. Stokes, J. H., and Scholl, A. J.: Probable Paraffin-Oil Tumor, Arch. Dermat. & Syph. **4**:50 (July) 1921.

2. Cole, H. N.; Littmann, Sidney, and Sollmann, Torald: Study of Mercury Injections by Means of the Roentgen Ray, J. A. M. A. **75**:1559 (Dec. 4) 1920.

SPOROTRICHOSIS

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Sporotrichosis is an infectious granuloma affecting the skin and subcutaneous lymphatic tissues, caused by a definite pathogenic fungus, or by a saphrophyte which has become pathogenic.

The micro-organism of sporotrichosis was first described by Schenck [1] in 1898 and corroborated by Hektoen and Perkins [2] in 1900. It has been found in the lungs and mouth, in the nasal discharge of persons and domestic animals, and in the blood culture of animals suffering from a sporothrix infection.[3]

The histopathology is that of an infectious granuloma, and has characteristic features similar to those of blastomycosis, tuberculosis, syphilis, and other granulomas. So far as I can ascertain, there have been only two reports of cases of sporotrichosis occurring in Texas.[4] Its apparent prevalence in other locations leads to the report of two cases which occurred in Galveston. Three other cases, which were clinically typical, have come to my knowledge, but in these a clinical diagnosis only was made.

Sporotrichosis was first described in 1898. In 1900 there were about thirteen authentic cases on record. Since that time, there have been over two hundred cases reported, many of which occurred in localities where an epizootic among animals existed. The report of so many cases in so short a time leads one to believe that many of the so-called cases of tuberculous lymphangitis, multiple superficial gummas and multiple cold abscesses, which have been reported by older clinicians, were cases of sporotrichosis. Fortunately, most of the cases are so definite clinically that once the practitioner's attention has been called to the disease, there is little danger of overlooking the diagnosis. The following two cases show the characteristic features and the course of the disease.

REPORT OF CASES

CASE 1.—*History.*—M. K., woman, aged 26, reported to the clinic complaining of sores on her arm and hand, and malaise. Her history was negative, except for a syphilitic infection some years before. She had a house dog which she cared for constantly. Five months before when she rubbed a blister on the hypothenar eminence of the right hand, the tissues under the blister became

1. Schenck: Johns Hopkins Hosp. Bull., 1898, p. 286.
2. Hektoen and Perkins: J. Exper. Med., 1900, p. 77.
3. Hyde and Davis: J. Cutan. Dis., 1910, p. 321.
4. Cooke: Texas State M. J. **9**:190, 1913. Shelmire, J. B.: Texas State M. J. **12**:267 (Oct. 16) 1916.

indurated in an area the size of two silver dollars. A month later, a similar lesion was noticed an inch above the wrist joint on its medial aspect. In a short time many fiery red papular areas with much induration under them, extended up the medial and flexor surfaces of the forearm, following the lymph vessels. The cubital glands became so enlarged that she could not flex the forearm. The axillary glands were also swollen but not tender. The swelling of the cubital and axillary glands disappeared spontaneously, while the nodular areas began to break down about a month after the patient first noticed them, and discharged a yellowish pus. The areas on the hypothenar eminence were lanced several times.

Physical Examination.—There was a large indurated, fiery red area, the size of a dollar, on the hypothenar eminence of the right hand, with numerous scabs, pustules, and sinuses which profusely discharged thick, dirty, yellowish pus. There was a large indolent ulcer and three smaller ones. There was a similar area on the medial side of the dorsum of the right hand with punched out indolent ulcers which discharged a yellow pus and serum. Pustules and papulo-pustules crowned the summit of the discharging sinuses. There were several scarlet red nodules along the course of the lymphatics on the flexor

Fig. 1 (Case 1).—Sporotrichosis of five months' duration.

surface of the right forearm, one of which was covered with a large scab. The cubital glands of the right arm were enlarged, but there was no involvement of the axillary glands. The healing ulcers appeared as violaceous indurations. The Wassermann test was positive.

Case 2.—B. W., a man, aged 40, entered the skin service complaining of "knots on his arm." The history was negative. The patient had two dogs of which he was very fond.

Examination disclosed a healing ulcer on the left fifth finger, which had been mashed one month ago. A few days later a hard, brawny, bluish, ulcerating lump appeared at the site of the injury. Sixteen nodules varying in size from that of an almond to that of a hen's egg were present on the right arm. The nodules, which apparently followed the lymphatics, were of varying consistency; some were firm but most of them were soft and fluctuating. The skin showed evidence of lymphangitis. Red striae extended up the arm, ending in a large mass of fluctuating axillary glands. The skin was hard, tense and brawny. The skin around the nodules was apparently not affected. A Wassermann test was negative.

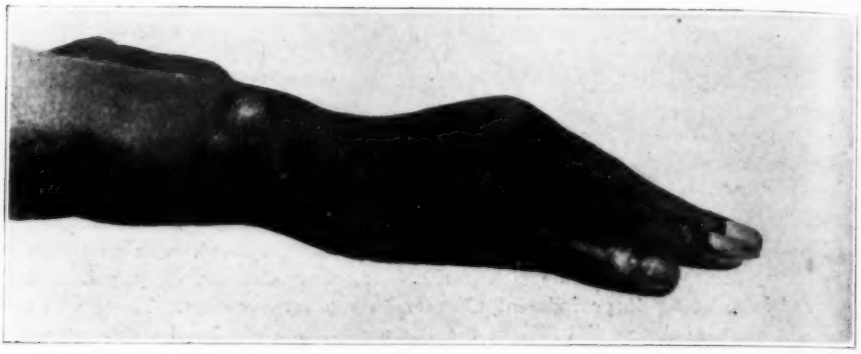

Fig. 2 (Case 2).—Initial lesion at site of traumatism to little finger.

Fig. 3 (Case 2).—Sporotrichosis nodules along line of lymphatics extending to axillary glands.

Aspiration of two soft nodules, yielded 2 c.c. of thick, reddish pus resembling anchovy sauce. Two nodules were removed for tissue examination.

The onset of these cases was slow with an incubation period of about one month. The duration of the disease was indefinite, with only a slight tendency to spontaneous healing. The lesions were practically painless. Both patients complained of malaise. It was notable that both patients, while having no definite symptoms, felt as if they had influenza.

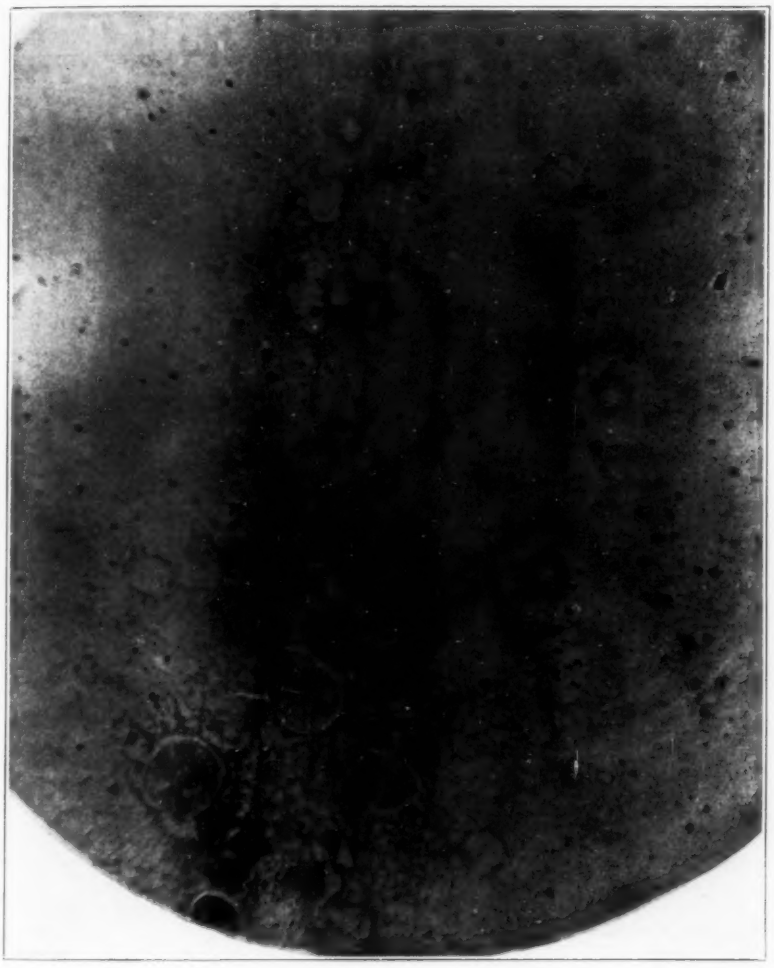

Fig. 4.—Smear from Case 2 showing pus cells, red blood cells and spores. Gram stain; high power; X 500.

The lesions in these cases of sporotrichosis varied. There were lesions resembling furuncles, gummas, tuberculosis of the skin, and blastomycosis.

The nodules in Case 1 which had not broken down were hard, indurated and inflammatory and sharply circumscribed from the sur-

rounding skin; some were tender, but differed from pyogenic lesions in having sharp margins. The older nodules were more indurated and had a tendency to fluctuate in the center. Those which had been opened had a punched out appearance, suggesting a broken down gumma. Some lesions which had been opened had small nodules developing in the edge of the wound. Sinuses, crowned with small nodules, developed where the bistoury had entered.

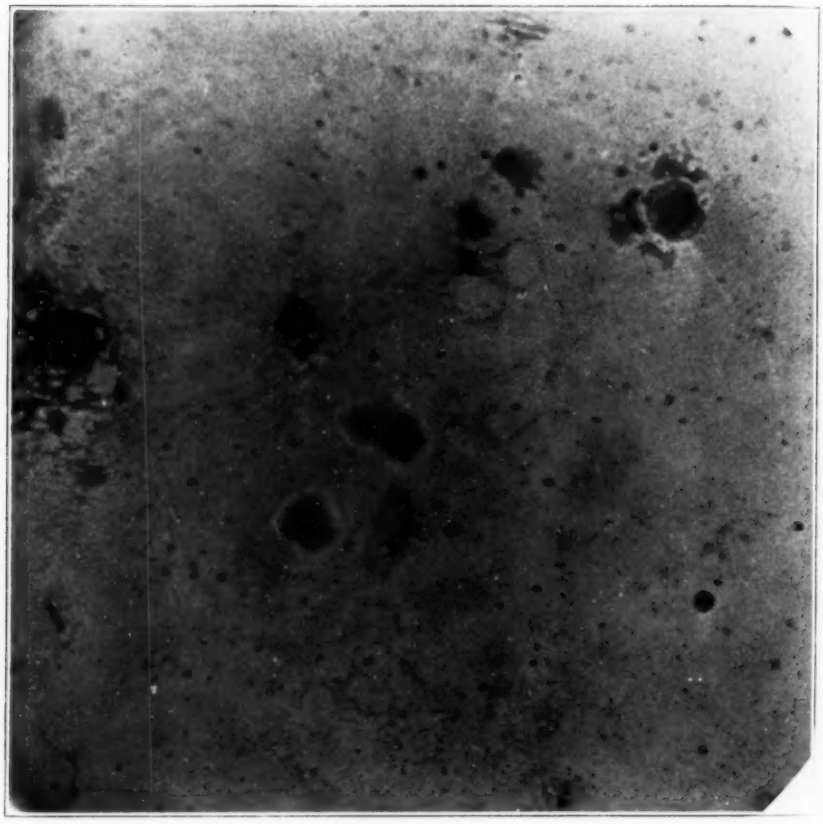

Fig. 5.—Tissue section showing multinuclear giant cells containing double contoured spore. Hematoxylin-eosin stain; high power; X 600.

The color of the older lesions ranged from deep red to a violet tinge. The healing nodules were all a peculiar violet color with a hard brawny induration. In Case 1, the lesions which were opened resembled blastomycosis, while the unopened lesions resembled gummas. Case 2 came to us in a more acute stage with lesions definitely along the lymphatics without the fungating granulations. Typical red striae led from one nodule to another. The skin in one area was a reddish brown

color and adherent to the underlying structures. This indurated area was leathery and the brawniness so suggestive of an acute infection that the patient came to us with a diagnosis of furunculosis and erysipelas.

The pus in all lesions was very profuse. In Case 1, it was of a dark grayish color, and thick. In Case 2 it resembled anchovy sauce. In both cases spores were demonstrated in smears. The spores were round

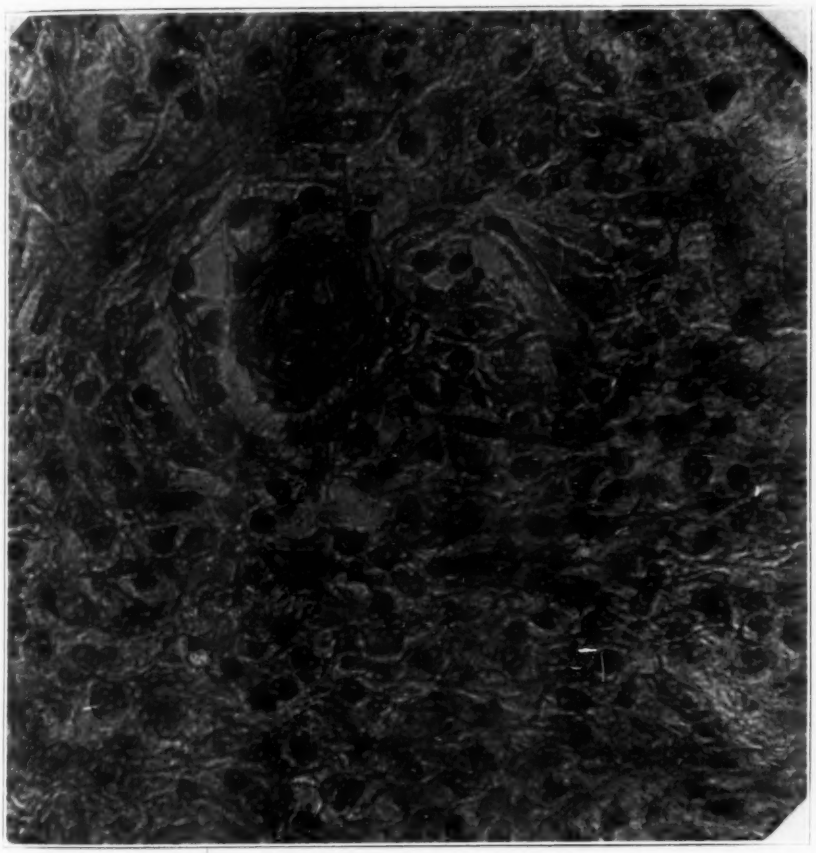

Fig. 6.—Smear from Case 1 showing spores. Gram stain; high power; X 500.

or oval and about one-half the size of an erythrocyte. Cultures were made in both cases on various types of mediums, but we were unable to grow the organisms. Our finding them more easily in smears was unusual. The organism, which can usually be demonstrated in the secretions, is a mold of the sporothrix group. It appears in culture as a mycelium with spores. The hypha and chlamydospore in stock cultures appears as a double contoured oval spore 3 to 6 microns in diameter.

Tissue removed for examination was stained with hematoxylin and eosin, methylene blue and by Gram's method. Two nodules were excised, one small and firm, which apparently was a lymph node, and another resembling a cold abscess with a fluctuating center, which, when opened, extruded a large quantity of mahogony colored pus.

The sections showed little change in the epidermis such as has been described by most pathologists. The infiltration was characteristic of a

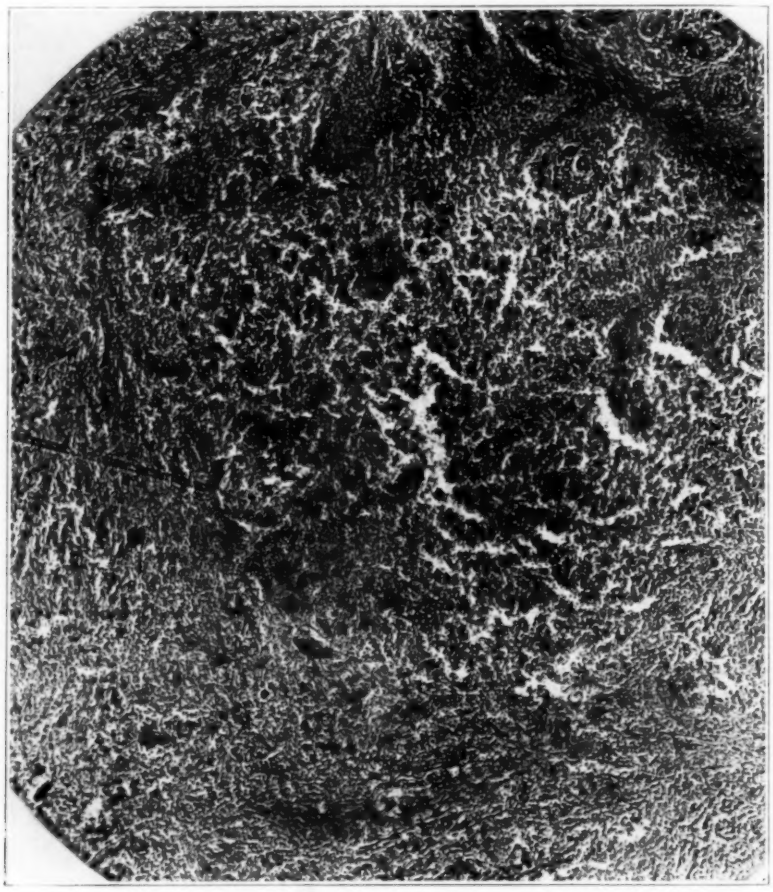

Fig. 7.—Central area of necrosis in a sporotrichosis nodule. Hematoxylin-eosin stain; low power; X 150.

granuloma. The cytology varied as to plasma cells, round cells, polymorphonuclears and epithelioid cells, depending on the extent of development. Evidence of tissue reaction was found in necrosis in the more advanced areas of the lesions. Here polymorphonuclear cells predominated, but away from the necrotic center round cells predominated. There was a marked increase in the vascularity of the tissue

as indicated by new blood vessels. There was a good admixture of epithelioid cells and fibroblasts. Here and there a typical Langerhans' giant cell was found surrounded by a mixture of mononuclears, polymorphonuclears, and fibroblasts. Spores could be seen in the Gram stained sections as well as in those stained with methylene blue. In a section stained by hematoxylin and eosin, a giant cell was found which contained a typical spore with a double contoured wall. These, although frequently described in animals, have not been seen in human cases before. The edema, the characteristic down growth of the rete, and the miliary abscess which is common in other mycotic granuloma, were not observed.

TREATMENT

The usual forms of treatment in sporotrichosis are: (1) potassium iodid internally; (2) roentgen ray; (3) iodin injections; (4) surgery.

In our cases surgery and potassium iodid were used. Patient 1 came to us after repeated lancing of the nodules. This made the condition worse. The lesions healed by scar formation, and it was noted that where a lesion was completely excised for biopsy, the scar formation was less than in those lesions which had been discharging.

Lain[5] treated eleven cases with roentgen ray and potassium iodid. We cannot draw conclusions from so few cases, but reasoning from analogy, this would be the method of choice. At times when the potassium iodid was omitted, and Lugol's solution applied or injected, the lesion failed to respond. Patient 1 developed iodism just before recovery, and potassium iodid was stopped. At this time arsphenamin and mercuric salicylate were given, and it was interesting to note that these remedies had apparently no effect.

We were unable in these cases to demonstrate the rapid specificity of potassium iodid. While both cases responded to this remedy it took about two and one-half months to effect a cure, with doses as high as a dram (3.75 c.c.), three times daily. Patient 2 received also tincture of iodin injections into the nodules which were suppurating, apparently with little effect.

The prognosis is always good, and a cure can be effected with potassium iodid in from six to ten weeks.

5. Lain, E. S.: J. Oklahoma M. A. **13**:41 (Feb. 20) 1920.

News and Comment

DEATH OF SIR JAMES GALLOWAY

The British Journal of Dermatology and Syphilis reports the death of Sir James Galloway, which occurred in London on Oct. 18, 1922. Sir James occupied one of the foremost positions among English dermatologists; he had been editor of *The British Journal of Dermatology and Syphilis* from January, 1896, to December, 1904. His death is a loss to his specialty.

DEATH OF DR. J. J. PRINGLE

Notice has just been received of the death of Dr. J. J. Pringle, the distinguished dermatologist of London. Dr. Pringle recently retired from practice. He was on a trip around the world when he died on Dec. 18, 1922, at Christchurch, New Zealand. Dr. Pringle is remembered by most American dermatologists who have visited London. He was not only one of the foremost British dermatologists, but he was a charming gentleman. He endeared himself more than most men to those who knew him.

Abstracts from Current Literature

BIOCHEMICAL STUDIES IN DISEASES OF THE SKIN. II. ACNE VULGARIS. O. L. Levin and Max Kahn, Am. J. M. Sc. **164**:379 (Sept.) 1922.

In the investigation of a series of acne cases, no constant defect of nitrogen retention products was found; nor was the calcium content increased, although hyperglycemia was present in 50 per cent. of the cases studied. Carbohydrate tolerance showed a normal blood-sugar curve; the renal glucose threshold was decreased in four patients out of twenty-three, and a mild acidosis was found in thirty per cent. of cases. The metabolic rate was slightly increased, and a majority showed fecal carbohydrate fermentation. It is thought that there is a possible thyroid dysfunction. Reduction of carbohydrates, gastro-intestinal correction, administration of alkalis and organotherapy were of value in treatment.

THE TREATMENT OF THE SYPHILITIC LIVER AND HEART. A THERAPEUTIC PARADOX. Udo J. Wile, Am. J. M. Sc. **164**:415 (Sept.) 1922.

Wile warns against the overenthusiastic and intensive treatment of cases of syphilis in which the liver and heart are involved. He advocates a slower method of treatment and a cautious use of intravenous medication. Some cases apparently do better if untreated or treated cautiously than if treated intensively, and in some the correction of the syphilitic process allows atrophy or some other process to complete the destruction of the viscus involved. These patients do better if the cases are considered as individual problems, and the use of mercury and the iodids is recommended. Cases are cited illustrating the points discussed.

A FURTHER NOTE UPON THE COMPARISON OF THE SACHS-GEORGI AND WASSERMANN REACTIONS IN THE SEROLOGIC DIAGNOSIS OF SYPHILIS. R. A. Kilduffe, Am. J. M. Sc. **164**:523 (Oct.) 1922.

A supplementary series of 430 parallel Wassermann and Sachs-Georgi reactions is reported, with the conclusion that the latter test is often difficult to read and that it is not as delicate and trustworthy as the Wassermann test. A fairly high percentage of reactions with the Sachs-Geori test are the reverse of those with the Wassermann test and the number of nonspecific reactions is too high to consider it (the Sachs-Georgi) a reliable diagnostic aid or a dependable test of treatment.

TREATMENT OF SYPHILIS AMONG THE INSANE. T. B. Christian, Am. J. M. Sc. **164**:529 (Oct.) 1922.

Latent syphilis is not considered cured, but the disease may be arrested, and the author feels that the cases treated have shown results worth the effort. Institutionalized cases are not generally fitted for treatment, as no benefit

resulted in his treated cases. Of 1,500 patients examined, 12.5 per cent. had a positive Wassermann reaction, and 26.2 per cent. of these showed signs of neurosyphilis.

CONCERNING THE WASSERMANN TEST IN ITS RELATION TO PRENATAL AND CONGENITAL SYPHILIS. R. A. KILDUFFE, Am. J. M. Sc. **164**:677 (Nov.) 1922.

The work of other investigators on this subject is reviewed, and the author's results added to theirs. His findings agree with those of other writers in that cord Wassermann reactions cannot be relied on unreservedly in making a positive diagnosis of syphilis. Investigation should extend to the parents and should be maintained during the early life of the child.

NOTES ON TWO CASES OF CUTANEOUS MYIASIS CAUSED BY THE LARVAE OF SARCOPHAGA Sp.? W. S. PATTON, Indian J. M. Res. **10**:60 (July) 1922.

Two cases in which larvae of flies were found in abscesses, one of which was probably infected after operation, are reported.

A NEW VARIETY OF STREPTOTHRIX CULTIVATED FROM MYCETOMA OF THE LEG. J. W. CORNWALL and H. M. LAFRENAIS, Indian J. M. Res. **10**:239 (July) 1922.

A case is noted in which a pure culture of a new streptothrix was obtained from sinuses on the leg. Although the new organism is called a streptothrix, its exact nomenclature is still undecided, although some class it with actinomyces, others with nocardia.

JAMIESON, Detroit.

RELATIVE VALUE OF SACHS-GEORGI AND WASSERMANN REACTIONS IN THE DIAGNOSIS OF SYPHILIS: AN ANALYSIS OF ONE THOUSAND SEVEN HUNDRED AND FORTY-EIGHT PARALLEL TESTS. C. F. CRAIG and W. C. WILLIAMS, J. A. M. A. **79**: 1597 (Nov. 4) 1922.

In a careful investigation, there was a total agreement in the tests of 85.5 per cent. But the disagreements were most serious, 33.3 per cent. of positive Wassermann reactions being missed by the Sachs-Georgi test in known syphilitic persons, and 26.5 per cent. of positive Sachs-Georgi reactions being unconfirmed by the Wassermann test and clinical findings. The general conclusion reached was that the Sachs-Georgi test is greatly inferior to the Wassermann test in the diagnosis of syphilis.

PUBLIC HEALTH VALUE OF THE KAHN TEST FOR SYPHILIS: A PRELIMINARY REPORT BASED ON FIVE THOUSAND EXAMINATIONS. C. C. YOUNG, J. A. M. A. **79**:1674 (Nov. 11) 1922.

The laboratories of the Michigan Department of Health have performed over 20,000 Kahn tests in comparison with the Wassermann reaction. The Kahn method has demonstrated its value in this comparative investigation and is now reported to physicians in conjunction with the Wassermann results.

MERCUROSAL IN SYPHILIS. H. N. Cole, J. R. Driver and J. G. Hutton, J. A. M. A. **79**:1821 (Nov. 25) 1922.

A carefully conducted investigation showed that mercurosal had practically no effect on the Wassermann reaction and that its spirocheticidal value (judged by dark-field examination) was very low. In the effect on lesions, it was not equal to mercurial ointment or red mercuric oxid. In four of twenty-three patients, venous sclerosis occurred.

Michael, Houston, Texas.

CANCER AND PARASITE. Isidor Kross, J. Cancer Res. **6**:257 (Oct.) 1921.

Experimenting in the Institute of Cancer Research of Columbia University, this investigator repeated the work of Nuzum with Mouse Carcinoma 11 of the Crocker Institute. He found many micro-organisms, but not the gram-positive diplococcus of Nuzum. When the tumor-cell factor was ruled out, without the destruction of bacteria, growths failed to take place on transplantation, though the controls showed 60 per cent. takes. The tumor-cell factor was eliminated in one series of experiments by lethal roentgen-ray dosage, and in another by freezing and thawing the culture material. The conclusion drawn was that the tumors in Nuzum's series were not parasitic in origin but probably spontaneous new growths.

H. R. Foerster, Milwaukee.

SOME CASES OF CUTANEOUS MYIASIS, WITH NOTES ON THE LARVAE OF WOHLFAHRTIA VIGIL (WALKER). E. M. Walker, J. Parasitol. **9**:1 (Sept.) 1922.

Two cases of this infection are added to two previously reported. As in the other cases, the cutaneous lesions were furuncular in type, and the larvae could be expressed from them. Another case, from Pittsburgh, was cited, but was probably due to larvae of another species. A detailed description of the larvae is also given.

ACTINOMYCOSIS IN A FOSSIL RHINOCEROS. R. L. Moodie, J. Parasitol. **9**:28 (Sept.) 1922.

Fossil remains from Nebraska are described which have a pathologic process strongly suggestive of "lump jaw."

Jamieson, Detroit.

FUSIFORM BACILLI AND SPIROCHETES IN PREPUTIAL SECRETIONS. Julius Brams and Isador Pilot, Tr. Chicago Path. Soc. **9**:292 (June 1) 1922.

Under normal conditions, fusiform bacilli with spirochetes and also various staphylococci, streptococci and diphtheroids, were found in fifty-one of 100 persons examined. The flora from these normal secretions closely resemble those found in cases of balanitis.

SPORO-AGGLUTINATION IN THE DIAGNOSIS OF SPOROTRICHOSIS. D. J. Davis and O. Garcia, Tr. Chicago Path. Soc. **9**:293 (June 1) 1922.

The agglutination test in suspected sporotrichosis is advanced as a reliable diagnostic aid in the presence of the negative cultural findings frequently obtained in old cases or in those in which there has been considerable iodid medication.

GUMMAS OF THE BASE OF THE HEART WITH SYPHILIS OF THE AORTA. NEWTON MILLER, Tr. Chicago Path. Soc. **9**:300 (June) 1922.

A case is reported with necropsy findings.

XANTHOMA TUBEROSUM MULTIPLEX. B. B. BEESON, Tr. Chicago Path. Soc. **9**:306 (June 1) 1922.

A typical case is reported in which there was an increase of the blood cholesterol.

FOERSTER, Milwaukee.

THE FIRST CONGRESS OF FRENCH SPEAKING DERMATOLOGISTS AND SYPHILOLOGISTS (Continued). Presse méd. **30**:571 (July) 1922.

Subacute Adenogenous Venereal Ulcer; Inguinal Lymphogranulomatosis. Presented by J. NICOLAS and M. FAVRE.

The presenters, in association with Durand, in 1913, described an inguinal glandular suppuration occurring in small foci, which were isolated and disseminated throughout the parenchyma of the gland. Occasionally there were fistulas. Exceptionally, ulcers were seen. The pus from these abscesses was thick, viscous and yellowish white, and was difficult to aspirate. The pus consisted of caseous granules which were made up of polymorphonuclears, small and large lymphoid cells, large acidophilic microphagic mononuclears and, finally, some chromatophilic granules.

The inguinal lesion may be unilateral or bilateral. It may occur also in the axilla. The evolution is chronic. The infiltrated inguinal plaques are made up of a mass of glands spreading from place to place through new foci, until therapeutic intervention takes place or spontaneous cure occurs.

The ganglionic inflammation is consecutive to a genital ulceration. The disease in its early stages occasionally gives some general toxic symptoms, although this is not always true. The Wassermann reaction is always negative.

The histopathology is always definite. The chancre of inoculation is a plasmoma without polymorphonuclears, with newly formed vessels on the surface and sometimes a small abscess in the deep corium.

The glands show, on microscopic section, miliary gummas, and lenticular abscesses with giant and epithelioid cells at their border; as well as great numbers of giant and epithelioid cells isolated throughout. There is a disappearance of the normal structure of the glands which is replaced by all types of cells, including lymphoid, mononuclears, connective tissue, large acidophils, polymorphonuclear neutrophils and eosinophils, which characterize the granuloma, from which the name of lymphogranulomatosis was originally chosen; but which it is better to drop because of the confusion with the German disease malignant ganglionic granuloma, in which the suppurative adenitis is distinctly different.

The malady is essentially one of the adult male, at the height of his sexual activity. Occasionally, it is seen in man and wife. It appears in every part of the world. Incubation is from ten to twenty-five days.

All efforts to find the pathogenic agent have failed. Favre has obtained some cultures, but their value must be demonstrated. A few men have obtained positive results by inoculating the eye of a rabbit, but they were unable to find the organism.

The treatment of choice is: radiotherapy, complete curettage or surgical excision. Others have obtained good results from emetin injections associated with iodid given intravenously.

This disease is a definite entity and should take its place with the other venereal diseases. It is called "a climatic bubo."

Discussion.—Subacute Inguinal Polyadenitis Under the Name of Lymphogranulomatosis: Teissier, Gastinel and Reilly studied twenty cases. They support the views of Durand, Nicolas, and Favre. They insist on the temperature curve, which may be cyclic or undulating. The authors differentiate this bubo from that of pest bubo, especially by the abscesses, necrotic plaques, and a thrombosis of the lymphatic vessels by the bacilli of Yersin, as seen in pest.

Milian refuses to recognize lymphogranulomatosis as a morbid entity. He considers it a syndrome which may be produced by several conditions, such as tuberculosis, syphilis and soft chancre. The absence of the bacillus of Ducrey establishes nothing, as it is always difficult to cultivate; and also, at the beginning of the soft chancre, autoinoculation may be unsuccessful.

Dubreuilh and Petges (of Bordeaux) do not share the opinion of Milian, but confirm the researches of Nicolas and Favre. They enumerate the fundamental distinctive characteristics which separate soft chancre from lymphogranulomatosis.

Ravaut does not compare lymphogranulomatosis to soft chancre. He considers it more of a general infection. He found ameba in the pus and, for this reason, employed emetin.

L. Bory confirms the general opinion, which is contrary to that of Milian. His remarks are similar to the preceding. Slight positive Wassermann reactions have been noted, but this is only a coincidence.

Lymphogranulomatosis Inguinalis and Syphilis: Spillmann, Drouet and Michan (of Nancy) reported observation of a patient who had several attacks of inguinal adenitis presenting all the characteristics of lymphogranulomatosis, and at the same time two syphilitic chancres. This proves that the two may exist together.

Lymphogranulomatosis (Ulcer of the Skin—Hodgkins' Disease): Nanta (of Toulouse) observed a patient having this condition, described in France under the name of "metatypique lymphadenoma" by Bezancon and Labbé, a short time after the work of Paltauf-Sternberg. This affection is accompanied by cutaneous complications in the form of tumors, exanthems, often pruriginous erythrodermas and ulcerations coming on in the course of tumors. In the author's case, there existed some primary ulcerations of the skin, near the orifices.

DIVERSE COMMUNICATIONS

Tertiary Syphilis of the Incisor Teeth.—Nicolas and Massia (of Lyon) point out that incisor teeth may be attacked by syphilis either during intra-uterine life or later in adult life. The congenital lesions are dystrophic and may involve the superior incisors (as in Hutchinson's teeth). If the lesions appear after birth they are classified as tertiary. One notes localized gummatous osteitis of the intermaxillary region, such as tumor, ulceration, fistulas and sequestrums. A roentgenogram is useless.

Multiple Locations of Hereditary Syphilis.—Nicolas and Gaté report the history of a girl, aged 18 years, who had hereditary syphilis appearing in several locations: the skin, bones (by hydarthrosis), ganglions, teeth and eyes

(interstitial keratitis). She had a positive Wassermann reaction. The interesting point is that the patient was treated for ten years for tuberculosis, showing how closely the symptoms of pseudotuberculosis resemble hereditary syphilis.

A Case of Venereal Granuloma.—J. and M. Peyri (of Barcelona) observed a patient having a venereal inguinal bubo, with a serpiginous phagedenism which was neither soft chancre, tuberculous, syphilitic nor mycotic. These are rare cases, which have not been catalogued.

Reticulated Pigmentary Poikiloderma of the Face and Neck.—Civatte presented three cases of a dermatosis characterized by a mottled eruption, which had a predilection for the face. This affection appeared especially in women about the time of the menopause. It was characterized by intermingled red, brown and white macules. The whole picture was that of a network of erythematous, pigmented macules, which appeared on a white background. Under this mixture, the skin atrophied. The histologic picture was one of degeneration rather than of inflammation. The author thinks that these are cases of degenerative endocrine origin. He treated two of them with suprarenal glands, with great improvement. One of these cases was treated with ointments, without result.

They may be a definite clinical type associated with the endocrins. One can put these cases in the poikiloderma provisional group, but only in order to separate them from the type described by Jacobi.

The Reaction of Connective Tissue to Cutaneous Epithelioma.—J. Peyri and Carreros (of Barcelona) believe that, in all epitheliomas, a definite factor lays the foundation for the consecutive lesions. It is a process of senile skin: congenital senility in xeroderma pigmentosum; acquired senility in radiodermatitis; physiologic senility in the old. The degree of connective tissue reaction indicates the gravity of the process: in grave neoplasms, the connective tissue is embryonic; in benign neoplasms, the connective tissue is adult in type, abundant and well organized. The authors have studied this connective tissue organization after the method of Rio and the triple coloration of Calleja.

Pagetoid Epithelioma of the Abdominal Region.—A. Eliascheff has observed in an aged woman a mixed metatypic epithelioma of the abdomen which had been present for twenty years; in addition to spinous cells, some dyskeratotic cells were found.

Darier spoke of the importance of a biopsy in this case, because it determined whether the treatment should be surgical or radiotherapeutic.

Treatment of Keloids by Radium.—Cottenot has obtained excellent and rapid results with radium. One or two months of treatment with massive doses causes the keloid to disappear. The results are much better than those obtained with the roentgen ray.

Jeanselme has observed good results in keloids and sclerodactylitis with ionization of potassium iodid, but the procedure is too inconvenient.

Carbon Dioxid Snow and Acne.—Spillmann and Watrin (of Nancy) have obtained good results in acne rosacea and papulopustular acne by friction with carbon dioxid snow. The reaction disappears in forty-eight hours and treatment can be given again in a week.

A Case of Voluminous Rhinophyma.—Nicolas and Lacassagne (of Lyon) reported the case of a man, aged 55 years, who had a slight acne of the cheeks and neck, thirty years ago. Within the past few years, his nose had grown gradually larger, interfering with eating and sleeping. The tumor was removed by cautery and weighed 800 gm. It was a fibromyxomatous mass.

Porokeratosis and Hyperkeratotic Nevi.—Chatellier (of Toulouse) reports a case of porokeratosis of Mibelli, localized on the lower left leg, but distributed along the whole course of the sciatic nerve, from buttock to foot. This case brings up some observations of Truffi, of Pellier, of Brocq and Pautrier and of Scholl. It seems that this is a case of nevus.

The Treatment of Tuberculous Lupus by Finsen Therapy.—L. Bizard presented a certain number of cases cured by Finsen therapy and did some research in regard to changing the method. He used pure ultraviolet rays, with and without compression.

Lupus Pernio.—Dubreuilh (of Bordeaux) reports some observations on lupus pernio, which is a special affection, being neither lupus vulgaris nor tuberculous lupus, and which is characterized histologically by an infiltration into the derma of epithelioid cells without giant cells. Its localization may be diverse, and recently Schaumann has thought it was a benign lymphogranuloma. There is nothing to affirm that it is tuberculous in character.

Ether Benzyl Cinnamic in the Treatment of Lingual Tuberculosis.—Jacobson presents three cases of lingual tuberculosis which he has treated by ether benzyl cinnamic in the clinic of Jeanselme by daily intramuscular injections. The patients were greatly improved. The author concludes that this treatment causes the infiltration to recede; the suppuration is stopped; the ulceration is progressively cicatrized and encircles the active lesion as in lupus, but more rapidly. The pain is rapidly ameliorated.

The Epidermatolysoscope.—Milian has observed in syringomyelia some bullous trophic lesions; the patient did not present Nikolsky's sign; but, by the application of the cryocautery for fifteen seconds, one could produce bullous lesions immediately. However, they did not appear in a healthy subject until twenty-four hours later. This method may be used to study the skin resistance.

Three Cases of Nevocarcinoma.—Hudelo and Cailliau have in three subjects observed some nevocarcinomatous lesions with associated sarcomatous lesions. Certain parts of the tumor showed islands of nevus cells and also some nevocarcinomatous neoplastic areas. Other zones showed some islands of nevic connective tissue cells, with a sarcomatous neoplastic mass. The classic character of the sarcoma encountered in these tumors was emphasized (vessels without walls and nonconnecting cells, divided in a fibrillary frame).

Histologic Study of Mycosis Fungoides.—Hudelo and Cailliau have followed three cases of mycosis for three years and studied them by biopsy in the different periods. The histologic diagnosis is rarely possible in the erythematolichenoid stage. There is an inflammatory reaction. The glands at this period show some signs of embryonic regression, with reappearance of germinative centers, in hyperactivity and very hypertrophic, forming some germinative cells; also some inflammatory elements and sometimes some eosinophils.

Already at this period slight evidence of a metatype is observed in the germinative cells and the cells of the first and second generation. From this metatype, follows a real "atypic" to the tumor stage in the skin, as in the gland. The cutaneous tumors have a reticulum in the meshes, in which are some normal, or inflammatory or neoplastic elements; the same aspect as the glands. Here the neoplastic state can be affirmed either by the fixed cells of the framework or by the free cells of the meshwork. The inflammatory state tends to disappear before the neoplastic state. The lesion ultimately corresponds to a lymphocytoma.

Mycosis fungoides corresponds to inflammatory and neoplastic lesions of the hematopoietic tissue, developed by the skin to a pathologic state. Following the inflammatory process in the first period, the lymphoconnective tissue cells proliferate, inflammatory and neoplastic cells in the period of young tumors, and pure neoplastic (lymphocytoma) in the period of old tumors. One may also have a lymphomatous or aleukemic myelomatous type predominating in the skin.

(*To be continued*)

McCAFFERTY, New York.

ABORTIVE TREATMENT OF SYPHILIS. E. FREUND, Gior. ital. d. mal. ven. **63**:316 (May) 1922.

In recent cases, with a negative Wassermann reaction, syphilis may be radically cured with one course of treatment of arsphenamin and mercury. Two or three courses should be given in cases of this kind, to be sure of a permanent result. After the Wassermann test has become positive, the abortive treatment should not be attempted.

SILVER ARSPHENAMIN AND NEO-ARSPHENAMIN IN THE TREATMENT OF SYPHILIS. G. MARIANI, Gior. ital. d. mal. ven. **63**:332 (May) 1922.

Silver arsphenamin is at least as active as arsphenamin. The clinical results obtained and the effect on the Wassermann test are the same as with arsphenamin. Neo-arsphenamin is inferior to the arsphenamin, although it has the great advantage of keeping for an indefinite time in the presence of air.

BISMUTH IN THE TREATMENT OF SYPHILIS. M. TRUFFI, Gior. ital. d. mal. ven. **63**:369 (May) 1922.

The action of the salts of bismuth is more energetic than that of mercury but less than that of the arsphenamins.

MERCURIC IODID OF POTASSIUM IN THE TREATMENT OF SYPHILIS. G. LUCCHETTI, Gior. ital. d. mal. ven. **63**:372 (May) 1922.

The author has used this preparation in the treatment of fifty patients. He concludes that it is a good, energetic antisyphilitic. The Wassermann test was negative in nineteen of the twenty-five patients that finished the treatment.

DERMATOSCOPIA. G. MELDOLESI, Gior. ital. d. mal. ven. **63**:565 (May) 1922.

The author uses a common microscope with the oil immersion lens applied to the skin. He uses a bright light on an angle of 45 degrees. In this way, he has been able to study the changes in the vessels of the papillae, in the gland ducts, in the corneus layer and in the pigment and hairs. He reports the dermatoscopic changes observed in many skin conditions, such as ulcers, chancre, erythemas, dermatitis exfoliativa, acne, scabies, mycosis fungoides, leprosy, sarcoma and xanthoma.

PITYRIASIS RUBRA PILARIS. G. MAURERO, Gior. ital. d. mal. ven. **63**: 580 (May) 1922.

Report of a case is presented, with discussion of the differential diagnosis with lichen ruber acuminatus.

POIKILODERMA ATROPHICANS VASCULARIS. (JACOBI) J. CAPELLI, Gior. ital d. mal. ven. **63**:596 (May) 1922.

This is a report of a case with a discussion on the etiology. The author thinks his case was due to an endocrine disturbance. The patient had symptoms of hyperthyroidism.

GRANULOSIS RUBRA NASI. C. DUCREY, Gior. ital. d. mal. ven. **63**:636 (May) 1922.

Two cases of this condition are reported. The disease is familial. The hyperhidrosis is not a constant feature, and the sweat glands may be intact, there being no connection between them and the papular or vesicular lesions. The author thinks the condition is due to a circulatory disturbance, with passive hyperemia and chronic inflammation. The process is similar to that of pernio.

HERPES GESTATIONIS, HERPES MENSTRUALIS, CONGENITAL HERPES. L. TOMMASI, Gior. ital. d. mal. ven. **63**:669 (May) 1922.

The author reports the case of a woman who suffered from attacks of herpes gestationis during her fourth and fifth pregnancy. Afterward, she had recurrent attacks of herpes coincident with menstruation. The child born at the time when the mother had the second outbreak of herpes gestationis presented an eruption of the same kind. Tommasi suggests the possibility of the endocrinous origin of this dermatosis, and feels inclined to believe that the suppression of the ovarian function during pregnancy is the direct cause of the condition.

TREATMENT OF TRICHOPHYTOSIS WITH INJECTIONS OF LUGOL SOLUTION. P. A. MEINERI, Riforma med. **38**:1015 (Oct.) 1922.

The author reports the case of a patient with trichophytosis of the beard cured by intramuscular injections of Lugol's solution. He uses a solution containing 1 gm. of iodin, 2 gm. of potassium iodid, and 100 c.c. of distilled water, of which he injects from 1 to 10 c.c. in the gluteal region every day. The patient received twenty injections, and the cure was complete.

PARDO-CASTELLO, Havana.

INVESTIGATIONS ON THE ETIOLOGY OF THE HERPES GROUP (HERPES ZOSTER, HERPES GENITALIS, HERPES FEBRILIS). LIPSCHÜTZ, Arch. f. Dermat. & Syph. **136**:428, 1921.

Examination in ten cases of idiopathic zoster revealed the presence in each case of "zoster corpuscles" in the nuclei of the prickle cells. Fresh eruptions stained according to Giemsa showed corpuscles of varying shape and size, located in the hydropic nuclei but also in the protoplasm. The corpuscles stained bright red, sometimes showing a granulated structure. Herpes genitalis showed similar corpuscles. In a few cases, Lipschütz succeeded in inoculating the human skin with herpes genitalis. The vesicles thus obtained contained the same "corpuscles" in the nuclei.

INVESTIGATION AS TO THE EFFECT OF IRRITANT BODIES FOLLOWING THE CELL DECAY CAUSED BY ROENTGEN-RAY IRRADIATION, WITH SPECIAL REFERENCE TO THEIR HEMOSTATIC QUALITIES. MÜLLER, Beitr. z. klin. Chir. **125**:414, 1922.

Irradiation causes development of vasoconstrictor substances in the blood, which probably originate from the decayed cells. The quantity of these substances is in proportion to the dose given. The author believes that the general effect of roentgen rays on the constitution is due to these vasoconstrictor substances, which act as an irritant (Reizkörper). This is a new explanation for roentgen-ray nausea and the damaging and beneficial effect of the roentgen rays (e. g., the hemostatic effect, and the influence on tuberculous foci).

AHLSWEDE, Hamburg, Germany.

THE SIMILARITY OF CARBUNCLES AND FURUNCLES. J. SCHÜTZ, Dermat. Wchnschr. **74**:421 (May 6) 1922.

A plea is made for the early recognition of differences between these lesions, because proper treatment in the early stages is important. General anesthesia and thorough incision of carbuncles, even in incipiency, is advocated.

SOFT CHANCRE WITH METASTASES AND BACTERIEMIA. ROBERT AMSTAD, Dermat. Wchnschr. **74**:441 (May 13) 1922.

A case of soft chancre occurring on the right middle finger near the border of the nail is reported. The patient was a physician, and the lesion developed twenty-four hours after his care of a case of septic abortion. It started with erythema, swelling, pain and pustulation, changing within two days to a smooth ulceration, sharply circumscribed and slightly undermined, the floor covered with a yellowish, speckled, dirty film. Bacteriologically, the Ducrey bacillus was found. For several weeks, the temperature rose and there were signs of bacteriemia, accompanied by a popliteal phlebitis, swelling, and knotty infiltration of the leg, as well as ulceration of the right elbow at a distance from the affected lymphatics. The Wassermann reaction was negative. A bronchial pneumonia developed, but the patient survived the infection. Iodoform treatment locally was most effective.

CONTINUATION OF THE HANOVER MICROSPORON EPIDEMIC. C. STUMPKE, Dermat. Wchnschr. **74**:472 (May 20) 1922.

The best form of treatment was roentgen therapy, epilating doses being employed. Cultural investigation revealed that the spores live for long periods of time in the room inhabited by the patient. It seemed to the author that school infecions were uncommon.

WIND AND COLD URTICARIA IN CONGENITAL SYPHILIS. R. WAGNER, Dermat. Wchnschr. **74**:489 (May 27) 1922.

The patient, aged 17, had congenital syphilis, and an accompanying generalized, persistently recurring urticaria, which appeared on exposure to wind and cold. It had never appeared in the summer except once, after a very cold bath. The author accounts for the condition by an injury to the central nervous system caused by the syphilitic infection, affecting the nerves controlling the blood vessels.

EXPERIENCES WITH THE PRECIPITATION REACTION OF DOLD. F. JACOBSOHN, Dermat. Wchnschr. **74**:491 (May 27) 1922.

Four hundred and seventy serums were simultaneously examined by the Wassermann, Sachs-Georgi, and Dold technics. After careful investigation of non-syphilitic and syphilitic persons in various stages of the disease, the author concludes that the Dold reaction is technically easy to perform and to interpret, and the results obtained by it are in greater accord with the results obtained by the Wassermann technic than are those obtained by the Sachs-Georgi method.

MUCOUS MEMBRANE AND BLOOD CHANGES IN DARIER'S DISEASE. E. SKLARZ, Dermat. Wchnschr. **74**:513 (June 3) 1922 .

A case of Darier's disease occurring in a man, aged 43, is described, in which there were numerous pinhead sized soft efflorescences situated on the gums and inner cheeks, and the blood picture showed an increase of transitional leukocytes. Differential counts indicated that the latter were between 20 and 30 per cent.

ANDREWS, New York.

THE UNSTAINED AND STAINED NORMOMASTIC REACTION OF THE SPINAL FLUID. KAFKA, Deutsch. med. Wchnschr. **47**:1422, 1921.

Colloid reactions make possible a qualitative examination of the albumin conditions in the spinal fluid and thus constitute a distinct progress in liquor diagnosis. The colloidal gold reaction is preferable to the mastic reaction in general. The colloid curves in many cases facilitate the clinical diagnosis, particularly in syphilis.

MERCURY AS A STIMULANT IN STOMATITIS ULCEROSA. KÖTHE, Deutsch. med. Wchnschr. **48**:6, 1922.

The author makes use of the stimulating effect of very small doses of mercury on the tissue. He treats stomatitis by washing the mouth with hydrogen peroxid, painting it every other day with 8 per cent. zinc chlorid, and by oral medication: black mercuric oxid, 0.01 gm. and sugar of milk to make 10 gm., a teaspoonful three times daily.

SCABIES IN SUCKLINGS. HEILMANN, Deutsch. med. Wchnschr. **48**:9, 1922.

Lesions can be found on the scalps and faces of sucklings, which does not occur in adults.

BOTRYOMYCOSIS. SCHÜRMEYER, Deutsch. med. Wchnschr. **48**:47, 1922.

Examination of ten cases indicates that the tumor-like proliferation of the capillaries is the primary disturbance; while the superficial inflammatory layer develops secondarily and is due to the irritating effect of the tumor, which penetrates the epidermis. The author therefore suggests the name "angioma proliferans polyposum."

DERMATOMYOSITIS. KARGER, Deutsch. med. Wchnschr. **48**:112, 1922.

A case is reported which, apart from myogenous contractions, showed various skin symptoms, from erythema to atrophy, besides an edema of the affected muscle areas. While the prognosis is doubtful and the etiology uncertain, the treatment should be directed toward the contractions.

ANAPHYLACTIC SYMPTOMS FOLLOWING INJECTIONS OF FOREIGN SERUM (ARTFREMDE SERA): A CONTRIBUTION TO THE QUESTION OF SEASON DISEASES. MAKAI, Deutsch. med. Wchnschr. **48**:257, 1922.

The author treated cachectic tuberculous children with daily injections of from 0.5 to 2 c.c. of horse serum. Up to 100 injections were given without causing anaphylactic symptoms. In the summer, however, there were pronounced anaphylactic symptoms in many cases. In the following winter, the same measures under the same conditions did not cause disturbances. The frequency of certain dermatoses in spring, such as psoriasis, eczema and urticaria, is analogous to the occurrence of those due to endocrine disturbances.

THE PROBLEM OF THE STIMULATING EFFECT OF ROENTGEN RAYS: BIOLOGIC RESULTS OF EXPERIMENTS ON PLANTS. HALBERSTAEDTER and SIMONS, Fortschr. a. d. Geb. d. Röntgenstrahlen **28**: 499, 1922.

The influence of roentgen rays on the growth of wheat plants, beans, etc., was tested. Results obtained varied much, according to the plant and its biologic condition. While one-twentieth of an erythema dose still impeded the growth of a bean, 1¼ times a dose promoted the growth of dry wheat. The length of time before success was attained was inverse to the size of the dose.

THE DIFFERENCE IN THE EFFECT OF TUBERCULINS OF VARIOUS ORIGIN AS WELL AS THE TUBERCULIN DAMAGE IN DIAGNOSTIC TUBERCULIN INJECTIONS. NEUSTADT and STADELMANN, Klin. Wchnschr. **1**:166, 1922.

Following the application of old tuberculin (for subcutaneous diagnosis) to 171 patients, the authors obtained eleven focal reactions, six of which had decidedly damaging effect. They deny the value of diagnostic tuberculin injections in general, as the damage done is usually greater than the benefit derived.

THE NATURAL DEFENSES OF THE BODY AGAINST SYPHILITIC INFECTION AND HOW THEY ARE INFLUENCED BY MERCURY. BERGEL, Klin. Wchnschr. **1**:204, 1922.

Mercury does not kill spirochetes, but acts on the lymphocytes, which partly decay, thereby producing lipomatosis, which again decomposes, the spirochetes thus bringing lipoids into the blood, which strengthen the Wassermann reaction.

CONTRIBUTIONS TO THE CLINIC OF CONGENITAL SYPHILIS. STRANSKY and SCHILLER, Med. Klin. **18**:1, 1922.

The authors give two examples which prove that a negative Wassermann reaction of parents who previously had syphilis does not guarantee healthy children. In both cases, the father, and in one, the mother, had been treated energetically. In one, the father had been treated fourteen years ago, in the other, three and one-half years ago. The Wassermann reactions were negative. In spite of this, the children developed pronounced skin and bone symptoms of congenital syphilis which resulted in death.

Society Transactions

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY AND SYPHILIS

Regular Meeting, Oct. 3, 1922

HOWARD FOX, M.D., *Chairman*

SQUAMOUS CELL EPITHELIOMA DEVELOPING ON A LUPUS ERYTHEMATOSUS. Presented by DR. FRASER.

Mrs. K., aged 55, between the ages of 10 and 14 was subject to "abscesses" on the neck, which would break open and heal, leaving scars. The lupus area developed when she was 40 years of age, but there was no evidence of tumor growth until four months ago, when what the patient described as a small pimple appeared on the lupus area and grew rapidly. Examination at the time of presentation showed an elevated, circular, soft warty-like growth about 1 inch (2.54 cm.) in diameter, situated about midway between the outer margin of the right eye and lower lobe of the right ear.

Microscopic examination of a section showed the tumor to be a typical epithelioma of the squamous cell type.

DISCUSSION

DR. SATENSTEIN asked what started the epithelioma on the lupus lesion, and whether there had been long continued treatment of the lesion with caustics. In such cases as had been reported, the epithelioma developed as the result of long continued treatment of the lupus lesion.

DR. MALONEY replied that there was no history of any treatment preceding the development of the epithelioma.

DR. HIGHMAN said that he was inclined to believe that the earlier lesion was lupus vulgaris rather than erythematosus. It was often difficult to differentiate between the two clinically.

DR. HOWARD FOX said that he was aware that it was often difficult to distinguish clinically between lupus vulgaris and lupus erythematosus. He thought the eruption in this case was lupus vulgaris, especially in view of the fact that cancer developed much more often on lupus vulgaris than on lupus erythematosus.

DR. LAPOWSKI remarked that one saw more cases of lupus vulgaris than of lupus erythematosus.

DR. WISE said that it seemed to him to be lupus vulgaris, not lupus erythematosus; and he suggested that a biopsy be made of the flat lesion, not of the epithelioma.

DR. HOWARD FOX disagreed with Dr. Lapowski. He said he thought that in this country we saw more cases of lupus erythematosus than of lupus vulgaris.

RECURRING LYMPHANGITIS (ERYSIPELOID). Presented by DR. ABRAMOWITZ.

Mrs. G., aged 56, a widow, born in Germany, who had been in this country for twenty-nine years, and whose household duties were her only occupation, was well until five months ago, when a small red patch appeared below her left eye, and spread rapidly over her face and the upper part of her chest, the eruption being associated with high fever and constitutional symptoms, necessitating hospitalization for eight weeks. She appeared at the Vanderbilt Clinic shortly after she left the hospital, with a slight recurrence of the eruption, which showed as a diffuse erythema of the face, especially of the cheeks, which were slightly edematous. There was a mottled erythema of the palms and a moderate alopecia of the scalp. She showed, on presentation, a slight redness and puffiness of the cheeks; she had had two recurrences during the last month.

DISCUSSION

DR. ANDREWS said that so far these cases had not responded very well to roentgen-ray treatment. He had not observed any improvement in this case; but perhaps this was due to the fact that treatment had not been continued long enough. Theoretically it should be of some value, and the German literature reported success by this method; but we have not been able to draw any conclusions from our work so far.

DR. HOWARD FOX inquired whether any one had tried autogenous vaccines in such a case.

DR. WISE replied that they had treated five patients with autogenous vaccine made from the nasal secretion, and only one case responded favorably.

DR. WERTHEIMER said he wished to know what results had been obtained from using leukocyte extract in the treatment of erysipelas. He used it in every possible case, giving large doses, and it had happened that after forty-eight hours there had been a crisis, and the patients had recovered. One of the patients was an infant of 6 months who received from 0.75 to 1 c.c. and promptly recovered. In only one instance was there no result.

DR. LEVIN said that he had observed a rapid effect from the injection of 10 c.c. of Hiss' leukocytic extract in a patient suffering from an obstinate case of erysipelas.

DR. ABRAMOWITZ said that one patient with recurring lymphangitis of the face had received seven or eight roentgen-ray treatments with definite improvement. The case of a private patient started with erysipeloid of Rosenbach that involved the right index finger. She had three recurrences in seven months, each attack leaving the finger more swollen. She was given six injections of streptococcus vaccine, and at the same time one quarter Holzknecht skin units, unfiltered, at weekly intervals for six weeks. She had no further attacks in the past four months, and the right index finger was normal in appearance. In another patient whose lip was involved, he was able to find the streptococcus in the upper layers of the cutis, so that these conditions can be reached, even with unfiltered rays. He had had no experience with a leukocytic extract.

HYDROCYSTOMA. Presented by DR. ABRAMOWITZ.

Lena I., housewife, born in Russia, had lived about fifteen years in this country. The eruption had been appearing on her face every summer for the

last thirteen years. On the upper part of her nose and cheeks there were numerous pinhead sized, firm, translucent skin colored vesicles. In addition, she had an area about 8 inches (20.32 cm.) in diameter made up of telangiectases, atrophy and pigmentations, located on her lower abdomen, which followed a roentgen-ray picture taken about twelve years ago.

RETICULAR ATROPHY OF THE FACE. Presented by DR. ABRAMOWITZ.

L. H., a boy aged 10 years, born in this country, had an eruption on his cheeks, of two years' duration. Closely aggregated minute depressions were visible on the cheeks, with no other lesions. No other members of the family were affected, and there was no history of a previous lesion.

DISCUSSION

DR. WISE said that the case was a replica of one reported some years ago by Drs. MacKee and Parounagian, and in his opinion it belonged to the nevus group of diseases. There were no preceding lesions and no blackheads. The cases all occurred in children. He did not think the condition was a true nevus, but that it belonged in the group of nevoid malformations, such as von Recklinghausen's disease, ichthyosis, etc.

DR. HIGHMAN said that, from his recollection of the slides, he did not believe the case was a nevus. Clinically and histologically it reminded him of ulerythema ophryogenes, and also of the atrophic stage of keratosis suprafollicularis, not the early state, but the state in which puckering atrophy was present, and he so expressed himself at the time. He did not recall the details of Dr. MacKee's and Dr. Parounagian's cases, but the condition did not impress him as a nevus so much as one of the primary atrophies.

DR. PAROUNAGIAN said that he saw quite a clinical resemblance to the case reported by Dr. MacKee and himself.

DR. ROSEN referred to the case described by Dr. MacKee which he had an opportunity to study. His patient was a girl of 13 years, both sides of whose face showed a reticulated atrophic condition associated with erythema and numerous small comedones in the affected area. No acne lesions were present. The patient presented at this meeting failed to show the erythema which is one of the important associated symptoms.

DR. HIGHMAN said the description which Dr. Rosen gave of the condition substantiated the view he mentioned. He did not understand how any condition in the nevus class could start as a follicular hyperkeratosis leading to atrophy. In his opinion, the condition belonged more closely and particularly to the keratosis follicularis group, leading to the type of atrophy shown by this boy.

DR. LAPOWSKI said that he agreed with Dr. Highman. He had followed the case for two years, and called it keratosis follicularis. He had not seen any erythema. The comedo was a peculiar formation. It was not like the ordinary comedo which could be easily squeezed between two fingers. It had a hard end point which resisted very much when squeezed between two glass slides. He had never seen such a specimen except in keratosis follicularis. It was four or five years since he had seen the case.

DR. HIGHMAN said the point raised by Dr. Lapowski about his original impression that one of the conditions was a tuberculid reminded him that

there was a group of persons who regarded ulerythema ophryogenes as lupus erythematosus; consequently, if it suggested a tuberculid to Dr. Lapowski, it might very well have been one.

CONGENITAL ECTODERMAL DEFECT. Presented by DR. WISE.

C. R., a schoolboy, aged 14 years, born in the United States, had had the condition since birth. His parents, brothers and sisters were living and well.

The boy was well developed and normal mentally. The scalp was bald, except for sparse tufts of long velvety hair. There was also alopecia of the outer third of the eyebrows. The bridge of the nose was depressed, resembling the saddle nose of syphilis. The boy had only two milk teeth; of the permanent teeth only the upper central incisors, first molars and right lateral incisor had appeared. The voice was high pitched and of nasal quality. There was absence of sweat secretion, which made the patient uncomfortable during the hot weather. A histologic examination showed absence of sweat glands. The Wassermann test was negative.

DISCUSSION

DR. WISE said the interesting features of the case were the alopecia, the absence of sweat glands, and the presence of cysts of the cheeks and forehead. The patient had never perspired. There was an edentulous condition, there being only two or three teeth. No work had yet been done on the case, but Drs. MacKee and Andrews intended to investigate it and publish their findings later.

DR. RULISON said the child had volunteered the information that both parents had syphilis.

DR. LAPOWSKI said that the question raised by this case was one of great interest to every dermatologist. In his opinion, syphilis could not be excluded even after a minute clinical examination.

DR. LEVIN expressed regret that he had not seen the case presented by Dr. Wise. He said that two years ago he had treated a boy at the Cornell clinic who had been referred to them as having congenital syphilis. Several Wassermann tests were negative, and several injections with arsphenamin and mercury were without effect. A diagnosis of ectodermal defect was finally made. The patient had a rough, dry skin, marked alopecia of the scalp, absence of several teeth, a saddle back nose and other defects. When the clinic was converted into a pay clinic the boy ceased his calls, and Dr. Levin was inclined to think that this was the same patient, who had drifted to the Vanderbilt clinic.

DR. LAPOWSKI asked what improvement was to be expected from treatment. That form of syphilis was not an active disease.

DR. HIGHMAN said that a discussion like this reminded him of Gulliver's visit to Lilliput. It made no difference whether the boy's parents had syphilis or not. The boy had a congenital ectodermal defect, whatever the etiology or basis. Doubtless something in his ancestors determined the defect, and that was all one could say. The point of interest was that a patient could be born with so imperfect an ectoderm. It could not be proved by antispecific treatment that the boy was a congenital syphilitic, for there was nothing pathologic present that could be so tested.

HERPES ZOSTER AND VARICELLA OR HERPES ZOSTER GENERALISATUS. Presented by DR. MALONEY.

L. S., aged 54, born in the United States, a pantryman, five days previously began to have severe pain in his left shoulder, extending down over the left arm. A few hours later typical lesions of herpes zoster appeared over the outer edge of the left scapula and on several places on the left arm. At the same time, isolated vesicles appeared scattered over the trunk and extremities. These vesicles went through the changes typical of varicella lesions, and new crops have been observed each day since on the body, face and scalp. The zoster lesions have remained without change. The patient now presents typical lesions of herpes zoster and of varicella.

DISCUSSION

DR. LANE said that cases had been reported in which the clinical appearance was so distinctive that there was little doubt that there was a simultaneous or nearly simultaneous eruption of herpes zoster and varicella. In a case like the one presented it would be impossible to decide whether it was varicella alone, herpes zoster alone, or a combination of herpes zoster and varicella, until the organisms causing the disease had been found, or until some means other than clinical examination had been found for differentiating the two diseases.

DR. PAROUNAGIAN said that he had questioned the patient, who informed him that the eruption had appeared all at once, and there was no history of any one else in the household being ill or having any skin eruption. In his opinion, it was quite unlikely that two different diseases would appear at the same time.

DR. WISE said he believed the eruption was one of zona and varicella.

DR. MICHAEL was of the opinion that the patient presented a generalized zoster, such as had been recorded first by Tenneson. As to the etiologic relation of zoster and varicella, it appeared from the literature that there was some basis for the belief that the diseases had a common etiology, but he was certain that there were records of the same patient having had both diseases at different times, and the inference from this was obvious.

DR. HIGHMAN agreed with Dr. Lane from the standpoint of the application of rigorous standards, but thought that some conclusions could be inferred from the clinical appearance. As Dr. Wise had pointed out, the literature contained many articles on the subject, showing that the association of the two conditions was not infrequent. McEwen's article was probably the most comprehensive American one on the subject, and he noted cases of varicella following exposure to zoster. Dr. Highman said that he did not think that zoster was related to varicella, but he believed that possibly the organism that caused varicella occasionally was capable of producing the same pathologic conditions in the spinal cord as herpes zoster; so that if the two were associated, it was because on occasion micro-organisms causing varicella might cause zoster, although there was a definite herpes zoster that had nothing to do with varicella.

DR. ABRAMOWITZ told of a woman, 50 years old, who had an attack of herpes zoster involving the left side of her abdomen and thigh, with scattered vesicles on the face and trunk. These vesicles did not appear in crops, were not on an inflammatory base, and the patient had no rise in temperature. He had looked on this patient as having a case of herpes zoster with aberrant vesicles.

In the patient now presented, the lesions seemed to be of the same period of development; there were no lesions in the mouth and a number on the palms—rather unusual symptoms of varicella.

Dr. Rosen said that he believed the patient was suffering from two distinct conditions, herpes zoster and varicella. The varicella lesions were in different stages of development: some were vesicular, some umbilicated and others in the involuting stage; while the herpetic eruption was uniformly vesicular. The appearance of both at the same time was merely a coincidence, as might occur in other diseases.

Dr. Rostenberg said that the man distinctly stated that the area diagnosed as herpes zoster was very painful, whereas on the locations designated as varicella he had no pain. This point would rather lead to the assumption that he had the two conditions simultaneously.

Dr. Lapowski said the point he was questioning was whether the clinician could distinguish between the two diseases. In his opinion, this could not be done; it was impossible from the lesions alone to distinguish between varicella and herpes zoster.

Dr. Goodman (by invitation) said that he had made a study of the literature of so-called herpes zoster generalisatus, on the basis of the case mentioned by Drs. Parounagian and Rulison, which he had seen at Bellevue Hospital. The number of cases of herpes zoster generalisatus reported was small. Many authors had reported such cases as association of herpes zoster and varicella. In most of these the herpes had been followed in a short time, three to five days, by the generalized eruption, which looked like varicella. In the cases of this association in which the name herpes zoster generalisatus seemed applicable, the patients apparently were either aged or old in their tissue reactions. It had appeared that such persons had not been able to react in the ordinary way to herpes zoster, and there had been an overflowing of the eruption, so that it was more or less generalized. In some of the cases the generalized eruption could not be clinically distinguished from the eruption of varicella. In young children, the literature was replete with case reports of associated herpes zoster and varicella, as one disease in an adult was followed by the other in a child. Usually the herpes zoster was recognized in the adult patient first, although in a few cases the reverse had been true.

Although Tenneson was the first author to report the presence of aberrant vesicles in herpes zoster, Haslung probably reported the first case of herpes zoster generalisatus. Bokay was the first author to consider a common etiology for herpes zoster and varicella, following his experience with an epidemic of these diseases among schoolchildren. Lipschutz had recently reported the results of his researches on a bacterial cause for herpes, but no note as to any similar findings in varicella had been made.

Dr. Bechet said that both herpes zoster and varicella were common affections. The number of cases in which the two diseases were associated were few in comparison to the frequency with which they were encountered. Personally, he did not think that sufficient evidence had been brought forward to establish a relationship between the two; the occurrence of the two diseases in the few cases reported might well be a matter of coincidence.

Dr. Maloney said that this case began on Thursday, and the man was seen on Friday and each day since except Sunday. On Friday he had typical herpes zoster lesions on the shoulder and arm and isolated vesicles of varicella on the trunk and extremities. Each day since he had developed new crops of varicella lesions.

URTICARIA PIGMENTOSA. Presented by Dr. Scheer.

L. S., a boy aged 15, born in the United States, had had the eruption for three years. The lesions consisted of disseminated isolated spots varying in size from that of a pinhead to one-quarter inch (6.35 mm.) in diameter; they were light brown and slightly raised. On rubbing, some of the lesions became red and more raised. The lesions were most numerous on the outer surfaces of the upper extremities, less numerous on the trunk, and least on the lower extremities. The face, palms, soles and genitals were free from lesions. The only subjective symptom was slight itching when he was overheated.

SYRINGOCYSTOMA. Presented by Dr. Abramowitz.

M. R., a man aged 20, a clerk, single, born in Russia, who had been in this country for twenty years, had a mild acne on his face and a few furuncles on his buttocks. On being stripped it was observed that he had a profuse eruption on his trunk, principally on the anterior surface. The eruption consisted of brownish papules, millet seed sized and larger, and rather firm to the touch. There were no subjective symptoms. The diagnosis was confirmed by biopsy, and the patient was given roentgen-ray treatment. It was too soon to learn the result.

KAPOSI'S SARCOMA WITH OSTEOGENIC SARCOMA OF THE TIBIA. Presented by Dr. Abramowitz.

J. F., a man aged 60, a Russian, who had been in this country for seventeen years, a married man, unemployed, had been receiving roentgen-ray treatment at the Vanderbilt clinic for the last eight years for recurring violaceous infiltrating plaques on his hands, feet and legs. The clinical and pathologic diagnosis was that of Kaposi's sarcoma. He was discharged ten months ago and remained well until two months ago, when his left knee became swollen and painful. As presented, the skin on his legs showed pigmentation from previously healed lesions, with telangiectases on the backs of his hands. There was a diffuse, rather hard swelling of the left knee, which roentgenographically was diagnosed as osteogenic sarcoma. He was referred to Dr. Jaeger of the orthopedic department, who confirmed the diagnosis, and who advised the new intensive roentgen-ray therapy for him.

NEVUS, VERRUCOUS AND PIGMENTED. Presented by Dr. Abramowitz.

B. B., a girl, aged 2, born in this country, was brought to the Vanderbilt clinic by her mother, who said that she first noticed the eruption on the child when the latter was 7 months old. It appeared to her then like prickly heat. As presented, the eruption involved the entire body, with the exception of the face and hands, and consisted of grayish-brown patches arranged in streaks and various figures. Those on the back resembled the branches of a tree. There were areas of normal skin in between the nevus patches; both the flexor and extensor aspect of the extremities were involved. No other member of the family had the eruption.

Dr. Wise reported briefly on a case of syringocystoma of the trunk, treated with the roentgen ray by Dr. MacKee and cured.

DUHRING'S DISEASE. Reported by Dr. Abramowitz.

Regular Meeting, Nov. 1, 1922

HOWARD FOX, M.D., *Chairman*

SYPHILITIC BURSITIS AND TUBEROSERPIGINOUS SYPHILIDS CURED. Presented by DR. LEVIN.

L. P., a woman aged 30, married, an American, came to the Cornell clinic six weeks ago complaining of a swelling of the left elbow of two years' duration, of the left knee of seven months' duration, and of the right knee of one year's duration. Five months ago, she noticed an ulceration over the swelling of the left elbow. Her past history was negative for syphilis, except for a miscarriage six years before. Just below the extensor surface of the left elbow there was a pigeon egg sized hard swelling, which was movable on the deeper structures but seemed to be attached above. Over the swelling, the skin showed a serpiginous lesion made up of three confluent bean sized, dark ham colored tubercles with punched out ulcers. Over both knees similar tumors were present. On the skin over the knee there was a reniform, punched out ulcer, the size of a twenty-five cent piece, and above this a pea sized ulcer. A histologic examination revealed bursitis. The Wassermann test of the blood was four plus. The patient has received six arsphenamin and seven mercury injections.

PARAPSORIASIS. Presented by DR. WILLIAMS.

L. K., a woman, aged 28, first came under observation for a face eruption (acne) with which she had been troubled for eight years. Two years before she had noticed an eruption of the lower extremities, arms, trunk and buttocks; this condition waxed and waned. The trunk, buttocks, legs and arms presented discrete areas of slightly scaly noninfiltrated, erythematous patches, with exaggeration of the normal skin lines. There were no scratch marks, no enlarged glands, no vesicles and no papules. The areas between the breasts and scapulae were clean. The scalp was slightly scaly. The patient's lateral incisors were missing, and an older sister exhibited the same lack. The skin of the forearms was hairy; on the back of the wrist it was coarse and thick, with exaggerated lines; the face was inclined to hairiness. She was decidedly nervous, suffered from indigestion, nervous headaches and dizziness, and was inclined to drowsiness at times. The menses occurred every four to five weeks. The Wassermann test was negative. A biopsy had been made, but the report had not been received. All treatment with ointments, Alpine sun, etc., had proved fruitless, except for temporary improvement at times.

There was a general agreement with the diagnosis.

XANTHOMA TUBEROSUM MULTIPLEX: CHRONIC JAUNDICE. Presented by DR. LEVIN.

C. B., a woman, aged 41, married, a native of Russia, who had been in this country for fifteen years, appeared at the Beth Israel dispensary five months ago, complaining of a skin eruption of three months' duration. She said that the jaundice had been present for four years. She presented on the extensor aspects of the elbows and knees, on the buttocks and palms, innumerable pin point to small pea sized, yellow and yellowish-pink, elevated, firm and hard tubercles. On the lower lids, there were slightly elevated buff

colored plaques. The skin of the whole body showed a greenish yellow jaundice. The past history revealed a cholecystectomy performed five years before for cholelithiasis. Two years before, she had another operation for relief of the chronic jaundice. One year previously she was a patient at the Beth Israel Hospital, for persistent jaundice. Diagnosis at that time lay between carcinoma of the liver and pancreas, cholelithiasis (duct) and post-operative adhesions. At this time, she complained of the chronic jaundice, epigastric pains relieved by vomiting, intense pruritus and loss in weight. The urine showed the presence of bile. The stools were pasty. Blood examination showed: red blood cells, 4,500,000; white blood cells, 11,400; neutrophils, 50; large leukocytes, 5; small leukocytes, 45; hemoglobin, 60 per cent.; bleeding time, three minutes. Blood chemistry revealed: carbon dioxid, 47; glucose, 0.07; urea nitrogen, 15; nonprotein nitrogen, 35; calcium, 110 mg. per thousand cubic centimeters; blood cholesterol, 225. The blood Wassermann test was negative. The roentgenographic examination of the gastro-intestinal tract was negative. The Lyons test showed infection of the biliary system.

TERTIARY SYPHILIS OR DRUG ERUPTION? Presented by Dr. Parounagian.

O. A., aged 43, came to the hospital with the following history. He had had a chancre about twenty years previously, and had received some treatment. He claimed not to have had any other recent single sore. For some time he had been treating himself with patent medicines and other prescriptions, the nature of which he did not know. He came to the hospital with a papular eruption of the front of the trunk, the forehead and extremities. The back was clear. The eruption was polymorphic, but the papular element was greatest. The mucosae were clear. The regions about the anus and the axillae showed vitiliginous areas. The Wassermann reaction was four plus. The eruption on the forehead and some of the other lesions had cleared up since he came to the hospital, and the patient maintained that he was better. He had received no treatment.

DISCUSSION

Drs. Pollitzer and Gilmour said they believed the condition was syphilis.

Dr. Abramowitz said the man had a marked eruption on the forehead, especially at the hair line (corona veneris), and a few papules on the face. In his opinion, the condition was syphilitic. Although the man gave a history of having had a chancre twenty years before, the present eruption was of the secondary stage.

Dr. Chargin said that at first glance the eruption suggested lichen planus, particularly on the body; but on closer inspection, this diagnosis could be ruled out. The eruption was grouped in many areas; it was lichenoid in character, reddish brown, and especially marked on the face, particularly at the border of the scalp, and apparently was a secondary syphilis. The history that the man gave of an initial lesion twenty years before could be disregarded in the light of the present eruption.

Dr. Howard Fox agreed with Dr. Chargin that the eruption was of the secondary and not of the tertiary type, and that the diagnosis should be based on the objective evidence rather than on the patient's statement.

Dr. Parounagian said that from the beginning he did not consider the diagnosis of drug eruption seriously. He also did not regard the eruption as

secondary syphilis but tertiary, because the patient gave a history of a chancre twenty years before (the scar of which was perceptible), because there was no evidence of a recent chancre on the body, and because there was strong evidence of neurosyphilis—a positive Romberg sign, exaggerated reflexes, fixed pupils and patches of leukoderma in the axillae and the gluteal ridge, which are often noted in cases of tabes. Against secondary syphilis were absence of adenopathy, mucous patches, condylomas, and the fact that the eruption was not generalized.

SYPHILITIC REINFECTION. Presented by DR. PAROUNAGIAN.

T. R., aged 22, born in the United States, came to Bellevue hospital on Aug. 10, 1921. He presented a small ulcer of the glans penis near the meatus and a roseola of syphilis. The Wassermann test was four plus. The roseola had been present for a month. The patient was treated with silver arsphenamin, and the Wassermann test on Sept. 27, 1921, was negative, as it was on April 3 and Aug. 28, 1922. On Sept. 18, 1922, he came to the hospital with a small sore on the coronary border, of three days' duration. He admitted coitus five days and thirty days previously. The dark-field examination for spirochetes in this lesion was positive on September 18, September 19, October 3 and October 10. The Wassermann test was one plus on Sept. 19, one plus on Sept. 26, one plus on Oct. 3 and four plus on Oct. 11, 1922. No treatment had been administered at this time. Since October 11, the patient had received four injections of neo-arsphenamin.

SYPHILITIC REINFECTION. Presented by DR. CHARGIN.

B. R., a man, aged 25, single, said that he had had a chancre on the penis six years ago, which was followed in three weeks by a generalized secondary eruption. The Wassermann test was four plus. He had received seven arsphenamin injections, a week apart, followed by four salicylate of mercury injections. Treatment was then discontinued. The Wassermann test at this time was negative. From that time to August, 1922, he remained free from external manifestations of syphilis, and the Wassermann test made once every six months always proved negative (about ten tests). The diagnosis was made and treatment given at the Detroit Department of Health Clinic. In August, 1922, three weeks after exposure, the patient developed a sore on the penis, not at the site of the first chancre. The sore became phagedenic, and in the course of three or four weeks involved half of the circumference of the shaft of the penis behind the corona. About six weeks after the appearance of the sore on the penis, he developed a scattered papular eruption, which with the healing sore on the penis was present at the time the patient was exhibited at the meeting. The Wassermann test prior to the appearance of secondary eruption was found negative on two occasions. At the time of presentation, it was four plus.

DISCUSSION

DR. CHARGIN said that he had seen four or five cases of reinfection among his own patients, and had presented three of them before the Academy. In his experience, the secondary eruption in the reinfection cases was of the papular variety, and, while generally distributed, was comparatively scant in amount.

DR. POLLITZER said that Dr. Chargin's case presented all the evidence required to establish a case of syphilitic infection; but he suggested that Dr. Chargin verify for himself the Wassermann reports, and state how long a period elapsed between the infecting exposure and the appearance of the lesion.

The case presented by Dr. Parounagian was also probably one of reinfection; but the unfortunate feature of the positive Wassermann test at the first examination, made a few days after the appearance of the chancre, cast a little doubt on the question of reinfection. On the other hand, the other elements in the case, the fact that the Wassermann test, feeble at the first examination, became strongly positive a few weeks later, would indicate that in all reasonable probability it was a case of syphilitic reinfection.

DR. LEVIN said that he believed both cases were probably syphilitic reinfection; but, before accepting this diagnosis, one should be careful to prove that the patients had been cured of their former syphilis; certain criteria should be verified; they showed all the evidence, except that the spinal fluid had not been proved to be negative. Before the diagnosis of reinfection was accepted, it was necessary to show that the first infection had been cured.

DR. WILLIAMS said he would accept both of these cases as cases of reinfection, even without the spinal fluid examination. What other explanation could be given? For many years, it was not thought possible, for the patients were not cured; but now that they were cured by thorough treatment, reinfection did occur. He could see no reason theoretically why a positive spinal fluid should be incompatible with reinfection; it is often obtained with repeated negative blood Wassermann tests, and Dr. Williams said he did not know any reason why such patients should not be reinfected with syphilis. The time had come when we should revise our opinion about these cases. He recalled a third case presented as a possible reinfection, but showing what was probably an ulcerating gumma.

DR. ABRAMOWITZ said that these two patients seemed to be, clinically, cases of reinfection. In the *Dermatologische Zeitschrift* for April, 1921, Arzt and Kerl cited the case of a patient treated eight years previously with neo-arsphenamin and mercury, who was found free of any clinical symptoms, whose Wassermann test of the blood and spinal fluid was negative, whose colloidal gold, Pandy and Nonne-Apelt tests of the spinal fluid were negative, and whose cell count was normal; yet excision of the scar from the healed chancre showed spirochetes in the dark field and in the tissue sections. Rabbit inoculation was positive. It seemed to them that in addition to the ordinary clinical and laboratory criteria for cure, negative animal inoculations were also necessary. Dr. Abramowitz was inclined to believe that since many cases of reinfection were being reported that seemed to conform clinically to fresh cases of syphilis, it was possible for such new infections to occur even though the patient still harbored a small number of spirochetes from a previous infection.

DR. LEVIN asked whether it was intended to make a distinction in the future between a reinfection and superinfection; also whether a patient was to be regarded as cured when all the accepted criteria had not been shown to have been fulfilled. We could not accept as cured a patient whose spinal fluid had not been examined, and in the case presented a positive reinfection could not be shown.

DR. CHARGIN, replying to Dr. Pollitzer's question, said that the penile sore appeared about three to four weeks after exposure. As to the criteria of a cure of syphilis before the theory of reinfection was accepted, strictly speaking

Dr. Levin was quite right in demanding a negative spinal fluid finding in addition to the usual criteria. Although experimentally in a percentage of the cases a patient having cerebrospinal syphilis could be infected with a fresh syphilis, in actual practice this was rarely encountered; so that when an infection occurred in a former syphilitic patient, in the absence of clinical evidence of cerebrospinal syphilis, a reinfection might reasonably occur.

It should be noted that clinically the patient who was presented showed no evidence of cerebrospinal involvement.

ERYTHRODERMA CONGENITALE ICHTHYOSIFORME. Presented by DR. PAROUNAGIAN.

G. A. N., a man, aged 43, born in this country, married, came to Bellevue Hospital with the history of having had an eruption on the body as long as he could remember. There had been no change noted either as age came on, or with seasonal variation, except that the skin had a tendency to "chap" in winter, and itched in summer. So far as he knew, there had been no familial history. His only child, a daughter aged 18, did not show any abnormality of the skin. The patient presented a generalized erythematous xerodermatous skin, especially of the flexors, with mild involvement of the scalp and in the regions of the eyes. The eruption was not greasy. The areas faded on pressure. The mucosae were free. The patient was healthy. The Wassermann test was negative.

DISCUSSION

DR. GILMOUR said the patient stated that the condition had always been red, as presented. That was not like the ordinary ichthyosis.

DR. POLLITZER said that he agreed with the diagnosis, and said it was possible that many of the cases which were grouped under that name represented several types of disease; they were very rare—only a few had been seen—and it was possible that in time some one would discover that several diseases were classified under the head of ichthyosis. The name perfectly described the condition presented by this case.

DR. GOECKERMAN agreed with the diagnosis, and thought that in time we would be able to differentiate the various forms of ichthyosis, as Dr. Pollitzer said. He, himself, had been much impressed with the ichthyotic palm which this patient presented.

DR. ABRAMOWITZ said that he agreed with the diagnosis. The man had erythematous areas on an ichthyotic skin, with involvement of the flexures, which was an important point against ordinary ichthyosis; but there were some customary features that were missing. The man had an area of skin on the chest which appeared to be practically normal. The palms were only slightly involved, and there was no history of an increased growth of hair and nails when the patient was younger.

DR. WILLIAMS said that he agreed with the diagnosis and said that it was evidently a developmental anomaly, and that among other features the patient had a great many small, round, flat, bright red, slightly elevated angiomas.

LUPUS ERYTHEMATOSUS. Presented by DR. ROSTENBERG.

N. L., a young woman, aged 18, unmarried, American born, was a stenographer by occupation. Her family and personal history up to the present illness were irrelevant. The present trouble started about a month before.

when the patient noticed a small reddish spot on her chin, which was then diagnosed and treated as a case of ringworm. The patient soon noticed the development of similar lesions on her forehead, neck and scalp. Examination revealed a circular area on the chin, the size of a fifty-cent piece, which looked like a superficial, smooth, somewhat atrophic scar, light pink and somewhat reticulated, with a few adherent scales at the periphery. There were two similar lesions symmetrically located on the temples and extending about 2 inches (5.08 cm.) on the scalp, where there was a decided loss of hair. There were about half a dozen smaller lesions scattered over the scalp, appearing as depressed, smooth, white, glossy scars, with a total loss of hair. On the back of the patient's neck, there was a circular lesion, the size of a five-cent piece, where the skin appeared reddened, wrinkled and hypertrophic, and covered with a number of adherent scales.

DISCUSSION

DR. SCHEER agreed with the diagnosis.

DR. WISE said that, taking all the various clinical features into consideration, especially the sinking in of the scar on the chin, he would consider it a probable sarcoid instead of lupus erythematosus.

CHEILITIS EXFOLIATIVA. Presented by DR. ROSTENBERG.

Miss N. M., aged 43, a milliner, came to this country from Germany twenty years ago. Since then she had suffered from chapped lips every winter. The present condition began two years before on the lower lip, which became swollen and bled easily; the mucous membrane cracked and thick crusts formed; these soon dropped off and formed again. As presented, the entire vermilion border of the lower lip was involved, the mucous membrane being denuded, showing a reddened, fissured surface, with some adherent crusts. The patient complained of smarting and pain, especially while eating. She had received a large number of roentgen-ray treatments, without any permanent result.

DISCUSSION

DR. WISE said that the case had been under observation at the Vanderbilt clinic for many months. It was a case of cheilitis glandularis, however, not exfoliative. The patient was treated with the roentgen rays, without any results. She was incurable so far as radium and roentgen rays were concerned, and should receive more drastic treatment, such as electrocoagulation, or curettage, or both.

MULTIPLE BENIGN CUTANEOUS SARCOIDS OF BOECK. Presented by DR. LEVIN.

(Previously presented at the April meeting of the Manhattan Dermatological Society, and the October meeting of the New York Dermatological Society.)

CONGENITAL SYPHILIS IN BROTHERS. Presented by DR. PAROUNAGIAN.

C. V., aged 11, presented only two upper incisors, widely spaced, a high palatine arch and paralysis of the right side of the face. His Wassermann test was negative on June 17, 1922, and two plus on Aug. 22, 1922. He had since received eight neo-arsphenamin and six mercurosal injections.

F. V., aged 13, despite a four plus Wassermann test, showed no clinical stigmas of syphilis as to teeth, eyes, or hearing. He had received treatment similar to that given his brother.

Both the father and mother of these children had four plus Wassermann reactions. There had been no miscarriages, but two other children had died in infancy.

FOLLICULITIS DECALVANS. Presented by DR. LEVIN.

L. P., a schoolgirl, aged 11, had had the condition of the scalp for one year. The vertex of the scalp showed the presence of a cicatricial alopecia and the presence of several pustular, inflammatory follicular lesions pierced by hairs. In the region of the bald area, there were heaped pustular crusts, the remains of an impetigo occurring with pediculosis capitis. Mycelia and spores were absent in the hairs and crusts.

UNILATERAL ZOSTERIFORM VITILIGO. Presented by DR. HOWARD FOX.

S. J., aged 29, a full-blooded negro, born in the United States, a fireman, applied recently for treatment for a papular syphilid of late secondary type. Incidentally, he presented a unilateral vitiligo of the left side of the chest, which at first glance bore a striking resemblance to scars of a former herpes zoster. This condition was first noticed by the patient two years previously, the depigmented areas attaining their maximum size in three or four months. Since then they had remained stationary. There was no history of any symptoms suggestive of a zoster, such as painful eruption of vesicles. The patches of vitiligo were situated on the left side of the trunk between the midsternal line and vertebral column, and between the third and tenth ribs. They varied in size from that of a split pea to that of a palm; they were irregular in shape and contrasted strongly with the normal dark skin. There was no evidence of scarring or scaling or other change in the white patches other than the complete absence of pigment. The lesions had not been treated. The family history was negative. The patient had suffered from various diseases of childhood and from a chronic gonorrhea with many acute exacerbations during the last ten years. He denied any knowledge of having contracted syphilis. He was married in 1914. In the course of the next three years his wife had two stillbirths and one miscarriage. In December, 1921, he applied for treatment of sore throat and bone pains, at which time a Wassermann test was said to have been positive. He was given nine injections of neo-arsphenamin, according to his statement. About three weeks previously a papular eruption had appeared on the forearms, and the Wassermann test was strongly positive. The eruption had promptly disappeared under antisyphilitic treatment. The patient was a large, robust man in apparent good health.

DERMATITIS HERPETIFORMIS. Presented by DR. LEVIN.

S. M., aged 30, a married woman, was first observed three months prior to presentation. She complained of a generalized intensely pruritic eruption of six weeks' duration. She presented at that time a generalized eruption of large erythematous patches, on top of which there were numerous vesicles, bullae and pustules. There was no tendency to special grouping or distribution. The diagnosis was erythema multiforme bullosum. She was sent to the Mount Sinai Hospital. Within one week, the eruption changed its char-

acteristics in that the erythematous patches ceased appearing, and innumerable vesicles and bullae appeared all over the body, most marked over the scapulae, the sacrum and pubic regions. The vesicles arranged themselves in characteristic crescentic groups and quickly became pustular, giving rise to areas suggesting dermatitis vegetans. Under local and general treatment the condition improved; the lesions disappeared leaving deeply pigmented brown spots and scars. Six weeks ago the condition became severe again, and she was referred to Beth Israel Hospital. The generalized vesicular, bullous, pustular and vegetating eruption was accompanied by a severe conjunctivitis. The urine was normal, except that it contained albumin. The phenolsulphonephthalein test for kidney function showed elimination of 60 per cent. during the first hour, and of 10 per cent. during the second hour. Blood examination revealed: red blood cells, 3,820,000; white blood cells, 10,200; polymorphonuclears, 61 per cent.; eosinophils, 25 per cent.; large mononuclears, 5; small mononuclears, 9; hemoglobin, 60 per cent.; coagulation time, 4 minutes; a negative Wassermann test; blood glucose, 0.13; urea nitrogen, 16.2; nonprotein nitrogen, 23; creatinin, 2.8. Under arsenic administration there had been a steady improvement in the general condition, with a gain in weight, and the eruption had faded, leaving the generalized intense pigmentation and several areas of vesicles in crescentic grouping.

RECKLINGHAUSEN'S DISEASE AND SCLERODERMA. Presented by DR. LEVIN.

J. B., aged 53, a Bohemian woman, married, complained of general aches and pains, bitemporal headaches, insomnia and loss of appetite for one year. She did not mention the skin condition. Examination revealed innumerable pin point to quarter dollar sized, round, oval and irregularly shaped brown and yellowish pigmented spots, with which the skin was covered. Scattered over the skin, there were numerous pinhead to five cent sized, sessile and pedunculated soft, elastic and hard fibromas. Some of these could be depressed and made to disappear as through a hernia-like ring in the skin. On the inner aspect of the right leg, there was a large patch which was hard and hide bound. The skin in this locality was swollen, edematous and purplish. The face showed asymmetry, fibromas, moles, hypertrichosis, thinning of the eyebrows, prominent frontal ridges and malar bones. The thyroid was enlarged. The blood pressure was: systolic, 180; diastolic, 100. The uterus was enlarged (probably fibroid) and retroverted. The urine was normal, with the exception of a trace of albumin. The Wassermann test of the blood was negative. The urea nitrogen of the blood was 22 and the creatinin 0.7. The roentgenogram of the sella turcica showed no abnormality. Under treatment with thyronucleoprotein and suprarenal medication the headaches and general aches, as well as the other general symptoms, had been relieved, and the condition of the skin had improved.

NECROTIC GRANULOMA. Presented by DR. LEVIN.

H. G., an unmarried woman, aged 29, complained of lesions on the dorsum of the fingers and hands, which had been appearing for one year. When first seen five months before, she had numerous hard, dark red papules, with necrotic surfaces, covered with firmly adherent crusts, varying in size from that of a lentil seed to that of a small pea. Lesions which had healed had left pitted

scars. General and roentgen-ray examinations revealed no evidence of tuberculosis. The Pirquet test was negative. Marked improvement had resulted from injections of tuberculin.

CHANCRE OF THE FOREARM. Presented by Dr. Howard Fox.

J. W., aged 17, a full-blooded negro, born in the United States, a professional boxer, was first seen on October 6, at which time he said that he had first noticed the lesion on his forearm three weeks previously. It had not, to his knowledge, followed any particular traumatism. This lesion, which he said was a small ulcer at first, had gradually enlarged to its present size. It had been noticeably free from pain and tenderness. About two weeks later he noticed an eruption on the trunk and genitalia. He had had no headaches, sore throat or general malaise. Examination revealed an elevated, markedly indurated mass about one inch (2.54 cm.) in diameter, with a central brownish crust on the ulnar border of the right forearm. It suggested an abscess at first glance, though the induration and entire absence of tenderness precluded such a condition. There was a profuse eruption of scaling flat papules on the penis and scrotum, and a few similar lesions were scattered over the trunk and extremities. There was a general adenopathy of small shotty type in the inguinal, postcervical and left epitrochlear regions. The right epitrochlear gland was markedly enlarged (the size of a walnut) and contrasted strongly with the corresponding gland of the opposite side. There was no evidence of an initial lesion about either the genitalia or the buccal cavity. There was a congenital phimosis, but no edema or discharge, and no visible sore or palpable induration of the genitalia. Furthermore, the enlargement of the glands in the inguinal and submaxillary regions was slight. The Wassermann test was later found to be strongly positive, and under antisyphilitic treatment the lesion on the forearm had healed and greatly decreased in size, while the other lesions had rapidly disappeared. At the time of presentation, the right epitrochlear gland had decreased in size, but was still noticeably enlarged. A photograph was also shown, portraying the appearance of the eruption before treatment.

TERTIARY SYPHILIS AND VITILIGO. Presented by Dr. Parounagian.

A. K., aged 45, a Greek, was admitted to Dr. Parounagian's service from the surgical wards of Bellevue Hospital. He denied syphilitic infection, but admitted a penile sore thirteen years before. The routine Wassermann test was four plus. The patient presented a vitiligo of the skin in segmental form about the abdomen, face, scrotum and the anal regions. Clinical and fluid examinations did not disclose any disease of the nervous system of syphilitic origin. He said the vitiligo had been noticed for about one year. The case was thought interesting because of the symmetry of the eruption. The patient showed an internal strabismus of the eyes.

CONGENITAL SYPHILIS. Presented by Dr. Parounagian.

Baby S., aged 6 months, was brought to Bellevue Hospital by her parents. The baby showed condylomatous lesions about the genitals and anus and ringed secondary lesions of the legs. The parents were both infected with syphilis, the husband about eighteen years previously, the mother since her marriage.

There was one other child, apparently well. The parents were not under treatment at the time of the conception of the baby, or during the intra-uterine existence.

LESIONS OF THE PENIS AND INDEX FINGER: SUPERINFECTION? Presented by Dr. Parounagian.

J. O., aged 32, reported to the hospital with a lesion of the coronary sulcus and one of the index finger of the left hand. He admitted exposure to venereal disease five weeks previously. He noted the lesion on the penis one week later, and the finger was thought to have been injured about ten days later. He had been treated elsewhere with an injection of arsphenamin. The inguinal glands were enlarged. Several dark-field examinations had been negative, as had been the examination on the day of presentation.

GUMMA OF THE CLAVICULAR REGION. Presented by Dr. Parounagian.

H. S., aged 43, came to the hospital the day before presentation. The patient denied any syphilitic history. He had been having "fits" for twenty years. During the last month, he had noticed a mass over the clavicle. The mass had been growing larger and had reached the size of a hen's egg. The mass was red, with distinct fluctuation in the center, but was not very painful to pressure. The clinical diagnosis of gumma was ventured.

SARCOMA. Presented by Dr. Scheer.

J. T., a man, aged 55, a pedler, born in Austria, noticed the present growth nearly two years ago. It had been growing steadily. The growth was situated on the inner side of the spine of the right scapula. It was circular, three fourths of an inch (19.05 mm.) in diameter, elevated about three sixteenths of an inch (4.74 mm.) above the skin surface. It was firm and lobulated, and the surface was waxy in appearance and covered by telangiectasia. The growth extended into the cutis and moved in the deeper parts. It was exquisitely tender to the touch.

Paul E. Bechet, Secretary.

NEW YORK DERMATOLOGICAL SOCIETY

Regular Meeting, Oct. 24, 1922

William B. Trimble, M.D., *President*

VITILIGO. Presented by Dr. Highman.

M. A., a young Cuban woman of 17, first seen in September, 1921, had the same condition as her father, a man aged 70. The patient had had her first attack, of fifteen weeks' duration, a year before presenting herself, so that now the lesions were about 1 year and 3 months old. The original spot disappeared under treatment, but others developed on her body and persisted.

It proved to be a case which could be helped by treatment, and was presented to obtain the opinion of the members as to the problem of repigmentation.

Dr. Highman said that an interesting feature of the case was that when the patient first came for treatment she had only one patch on the right side of the lip. Hoskins and Hoskins showed that tadpoles treated with pituitary substance approximated the mature frog as to pigmentation. This led Dr. Highman to try the effect of anterior lobe of pituitary gland on this patient, and within a few weeks the spot on the lip disappeared; but it recurred six months later. An attempt to obtain the same results with the same kind of treatment a second time failed. The patient was then given suprarenal gland extract, and the spot on the lip disappeared and had not returned; but in other areas no results were obtained until the Kromayer light was used on one lesion on the back of the neck. This was on August 3. The endocrine therapy was maintained. In this patient, there had been a restoration of the pigment on the back of the neck but nowhere else. Apparently, the combination of Kromayer light and suprarenal extract had accomplished this, and the patient was presented for an opinion as to the feasibility of stimulating pigment by suprarenal gland administration and mobilization of it by the ultraviolet light.

DISCUSSION

Dr. Williams said that it was an interesting case. It was a question whether ultraviolet light was more effective than any other in fixing pigmentation. It was an interesting point that the pigment reappeared on the lip after one administration of pituitary extract, but did not reappear in any other spot after pituitary medication. It was doubtful whether the suprarenal extract had anything to do with the results, and whether just as good results would not have been obtained with the use of the ultraviolet light alone.

Dr. Whitehouse said that the case interested him very much, and he was sorry that Dr. Winfield was not present, as he had under observation a patient of his with the lesions extending around the neck, with hyperpigmentation at the borders. The patient had not menstruated for about three years, for no apparent reason, and her physician was interested in Dr. Timme's work and was giving her the female mixed glands, such as the pituitary, thyroid, ovarian extract, etc. Menstruation had occurred once or twice. Dr. Whitehouse had given her Kromayer light treatment for some time, and a marked change had taken place in the leukoderma—spots like freckles appearing in the depigmented areas. As a rule, no results were obtained in these cases by the use of the quartz lamp alone.

Dr. Trimble said when both treatments were employed it was difficult to know how much benefit was due to epinephrin or pituitary extract and how much to the Kromayer light. He felt sure, however, that the effect of the Kromayer light would be only temporary and that it would gradually disappear. In some cases of vitiligo he had instructed the patients to expose the hands to strong sunlight on the beach until they were thoroughly sunburned, and in that way the condition was apparently very much improved. This pigmentation faded out later. In treating cases with the Kromayer light for other conditions, the ensuing pigmentation faded out in time.

Dr. Highman agreed with what had been said; the striking feature of the case was that the spot on the lip healed without any trace. Unfortunately, he had not tested out the Kromayer light before using the other type of therapy, but the great cosmetic deficiency in the method was the difficulty in controlling the quantitative result. The new pigment might be permanent,

as it had persisted for ten weeks. The result was more a matter of theoretical than of practical interest, as there was no way of determining how even the repigmentation would be.

DR. WILLIAMS said that he had seen the pigmentation left by the Kromayer light last for at least two months after exposure.

CASE FOR DIAGNOSIS. Presented by DR. WHITEHOUSE.

O. S., a man, aged 21, born in Austria, who had been in this country for two years, had been ill fourteen months. His family history was negative. He said that he was first treated for kidney trouble, also for heart trouble. The present eruption began ten months ago as a lymphatic edema of the lower extremities with nodular formations in the skin, on the face, and along the lymphatics of the trunk and extremities. As presented, the arms and legs were distinctly sclerodermatous, and the face was sclerodermatous and nodular, the facies closely resembling lepra. From time to time, the patient said this became much softer. For the first two weeks of his illness he had a fever of irregular type, and the spleen was distinctly enlarged. At the time of presentation, however, the size of the spleen seemed to have returned to normal. He was in the Kings County Hospital for seven weeks, and was given twelve injections: six of chaulmoogra oil, six of its ethyl esters and one of arsphenamin, and three silver arsphenamin injections intravenously. Apparently no benefit was derived from this treatment. After microscopic examination the nodule was reported to be infectious granuloma, possibly lepra. No lepra bacilli were found in several nasal smears, and none in the tissue, and objectively the heat and cold sensations were normal. No anesthetic areas were found. Both ulnar nerves seemed to be enlarged. There was a perforation of the nasal septum from which there was a discharge at times. He had had marked hoarseness from the beginning, but laryngologists' reports were negative, nothing being found to account for it. The hair was much thinned over the calvarium, and the scalp was distinctly atrophic and tightly bound down, although the patient said there had never been inflammatory trouble. The clinical effect was similar to that of an old favus. The patient's general strength was good, and he was able to work.

DISCUSSION

DR. FORDYCE said the case was a most interesting one, but could hardly be made to fit in with the clinical picture of lepra. Furthermore, all the investigations had ruled that out. The objective appearance strongly suggested scleroderma. As the sections examined showed a granuloma, apparently scleroderma must also be ruled out. In a case of this kind, which presented such extraordinary features, further investigation was clearly indicated.

DR. CORLETT (Cleveland) agreed with Dr. Fordyce that it was an unusual case; if one met the patient on the street, seeing only the face, one would naturally think the condition was lepra; but leprosy is a slowly developing disease, and in nine months it would not have advanced to such a degree. That was one point against that diagnosis. Another was that the nerve trunks were not involved, and there were no anesthetic areas present. Also, in lepra he had never seen extensive scleroderma, such as appeared on the legs in this case. He did not think, therefore, that it was a case of lepra, but he could not decide what it was from a clinical presentation alone.

DR. LANE suggested that the lesions of the face might possibly be classified in the group of lymphogranulomas. The whole clinical picture was so atypical that all possibilities must necessarily be considered in trying to clear up the diagnosis.

DR. BECHET said that the distinct tumors on the face and sharply defined tumefactions in the arms showed a tendency to a symmetrical arrangement. In the arms, they almost formed nodular strands. They were subcutaneous, and the overlying skin was normal. These facts suggested the possibility of a diagnosis of hypodermic sarcoids of the Darier and Roussy type.

DR. WISE said that he was inclined to agree with Dr. Lane's suggestion on account of the histologic findings, but he did not recall any form of granuloma giving such a picture as the one here presented. At all events, the histologic picture must be taken into consideration. The same objection held against sarcoid, but by working on the theory of lymphogranuloma one would probably reach a diagnosis sooner than in any other way.

DR. HOWARD FOX said he thought it a most unusual and very extensive lymphogranuloma.

DR. WHITEHOUSE expressed his appreciation of the suggestions, especially that of lymphogranuloma. He had considered various conditions—scleroderma, sarcoid, etc., and he had been giving the patient pituitary up to 12 to 14 grains a day, together with thyroid, but without any benefit. One point that he could not reconcile with lymphogranuloma was the perforated nasal septum, which was discharging.

CASE FOR DIAGNOSIS. Presented by DR. TRIMBLE.

H. M., a man, aged 54, born in the United States, six years before first noticed a lesion on the tip of the right index finger. Three years before he was treated at the Skin and Cancer Hospital with roentgen rays, three exposures being made. After a few months, the lesion healed entirely; but it recurred after three months. It was again treated with roentgen rays at the Vanderbilt clinic, with no improvement. Since then there has been little change in the appearance of the lesion. The finger was permanently contracted, and in its middle was a superficial indolent ulcer, with epithelial proliferation in its center. The Wassermann reaction was negative, although there had been specific infection twenty years before.

A CASE FOR DIAGNOSIS. Presented by DR. TRIMBLE.

M. S., a man, aged 29, a physician, born in this country, said that the lesion began nine weeks before as a small papule on the right wrist, with central suppuration. A week later a fluctuating abscess developed immediately adjacent to the first lesion; a lymphangitis was also noticeable. A third lesion started two weeks later. Their centers became gangrenous, coalescing to form a single lesion, with an indolent, unhealthy granulating floor, and elevated, raised, rounded borders with a serpiginous outline. Two Wassermann tests were negative. A tuberculin skin test was also negative. A biopsy was taken, and the pathologic report was as follows: Deep in the corium was an area of dense round cell infiltration with a fair number of polymorphonuclear cells in places. The upper part of the corium showed edema, with a moderate number of free red cells in places. There was a moderate round

cell infiltration around the vessels and sweat ducts. The epidermis showed moderate hyperplasia, with intercellular and intracellular edema. Diagnosis: chronic inflammatory process.

DISCUSSION

Dr. Howard Fox said that the case of the physician with the lesion on the wrist was a most interesting one. There were two possibilities to be considered: granuloma inguinale and chancroid. He rather favored the first, since there was no accompanying adenopathy which chancroid would be likely to show.

Dr. Fordyce said that Dr. Fox's suggestion in regard to the lesion was worth following up. In his opinion, the finger lesion suggested a possible epithelioma.

Dr. Wise agreed with Dr. Fox in regard to the lesion on the wrist. The other case, the finger lesion, had been under observation at the Vanderbilt clinic for several months. The man had numerous warty keratoses on the soles and palms. The lesion on the finger had probably developed from a keratosis, and probably it was an epithelioma following the use of arsenic taken internally years before.

Dr. Williams said he thought Dr. Wise's explanation satisfactory, though the condition might not necessarily be due to arsenic. A man of middle age might develop a keratosis or an epithelioma without taking arsenic. He had keratoses on the feet also, and between the toes he had typical tinea, which would account for a good deal of the scaling.

Dr. Fox's suggestion of some of the rarer forms of infectious process on the other man's wrist appears to be a good one.

Dr. Highman said that he agreed with the views expressed by Dr. Wise in regard to the lesion on the finger, but that he could not agree with Dr. Williams' qualification of Dr. Wise's discussion. Keratoses did occur in men of this age, but not prevailingly on the palms. Dr. Wise's suggestion in regard to arsenic would explain the conditions on the hands, and was in accord with Dr. Wile's article of a few years ago quoting a voluminous literature.

Dr. Whitehouse said that he agreed with what had been said about the finger case, but that he was not so sure about the nature of the wrist case. Why would the lesion change so much under boric acid ointment? Would granuloma inguinale respond to a placebo of that sort?

Dr. Trimble said he did not know what the condition was on the physician's wrist. He had not considered granuloma inguinale, but he would act on the suggestion and treat him accordingly if the present treatment failed to heal the lesion. Seemingly it had begun to heal with the placebo.

In the other case, Dr. Fordyce's suggestion of epithelioma appealed to him strongly. The question of keratosis had been considered, but the man denied taking arsenic of any kind. He had received eight or ten injections of arsphenamin, but he asserted that he had the warts before taking the injections. There was no border to the lesion. Dr. Trimble said he had seen two or three cases of epithelioma develop from arsenical keratosis, but they had shown the usual clinical signs of cutaneous epithelioma, rolled border, etc.

Dr. Fordyce said he thought the best method of treatment for the wrist would be complete excision under procain.

Dr. Trimble said that he had told the young man that the ultimate treatment might be curettage if ordinary treatment failed to cure.

Dr. Highman asked Dr. Fordyce whether the lesion on the finger looked like an extramammary Paget's disease.

Dr. Fordyce replied in the affirmative.

PARTIAL DEPIGMENTATION, CHIEFLY OF THE FACE, IN NEGRO CHILDREN. Presented by Dr. Howard Fox.

A family of three mulatto children, born in the United States, was presented on account of areas of partial depigmentation occurring particularly on the face. The first child, W. P., a boy, aged 7, had suffered from this condition for one year. The second child, M. P., a girl, aged 5, had had the same disfigurement for two years. The third child, a boy, aged 4, had been similarly affected for eighteen months. The first child presented the patches on the face, elbows, knees and right popliteal space. The patches in the second patient were confined to the face, especially affecting the chin. In the third patient, the areas of depigmentation were on the forehead and temples and along the lower jaw.

The areas in question consisted of partial depigmentation, which varied in amount in the different children and in the individual spots. They were quite noticeable in the girl, although not to be compared with the striking contrast produced by an ordinary vitiligo in dark skinned races. The patches varied in size from that of a dime to that of half a dollar, and were round, oval and irregular in shape. The borders were ill-defined. In some of the patches there was evidence of slight scaling, while others were entirely smooth. There was no conclusive evidence of any preceding scaly disease, such as ringworm or seborrheic eczema. The girl presented several areas of scaling on the scalp, without, however, showing any broken hairs. When examined under the microscope, neither hair nor scales showed the presence of ringworm. The patches occasioned no subjective symptoms, the patients applying solely for relief of the cosmetic defect. All of the children had the usual kinky black hair of their race, with no alteration in color. Neither the parents nor grandparents, as far as could be ascertained, had suffered at any time from a similar disfigurement. All of the patients seemed otherwise to be normal, healthy children.

DISCUSSION

Dr. Wise said that since Dr. Fox first called attention to such cases he had looked for them at the Vanderbilt clinic. There were many like the ones presented — some with ringworm of the scalp and some without. At the Vanderbilt clinic, they had never been able to find any ringworm fungus in the scrapings. In his opinion, most colored children in New York would show some such lesions if examined thoroughly.

Dr. Highman said that here were three children in one family presenting the same condition; thus it might be the result of an infection, or it might be a familial disturbance. There was the biologic possibility of atavism to be considered, the lesions harking back to white forefathers. He had asked the mother about the color of her husband, and she had said that he was slightly darker than she. Such lesions might appear in negroes in whom there was an admixture of white blood.

Dr. Trimble said that he considered it a temporary condition, as he could not remember having seen an adult negro showing the affection.

Dr. Howard Fox said he had for some years noted this condition of partial depigmentation occurring frequently on the faces of colored children. It was present in full-blooded negroes as well as in negroes with various admixtures of white blood. He had been unable to account for this condition or to give it a name. It apparently had no definite relation to any ordinary disease of the skin.

A CASE FOR DIAGNOSIS. Presented by Dr. Schuyler Clark.

Mrs. J. P., aged 24, a housewife, born in Italy, said that her parents first noticed a bluish pigmentation of her temples and lower eyelids at the age of 4 months, following a convulsion. In so far as she could learn, the bluish-gray spots scattered over the sclera of both eyes had been present since birth. The patient complained that the pigmented areas of her temples and lower lids seemed to be slowly spreading. She had never used argyrol or other silver preparations in her eyes or nose. On examination, the sclera of both eyes presented numerous bluish-gray pigmented spots about the size of a lentil, or larger. The temples extending back from the eyes into the hairline and up toward the forehead, as well as the whole area of the lower eyelids, were distinctly bluish-gray, which differed from the color in argyria, and the discoloration did not disappear on pressure. There was a gradual shading off into the surrounding tissues, rather than a sharp line of demarcation. There were no subjective symptoms. The fact of the presence of the pigmented spots in the sclera suggested strongly that the whole condition was a nevus.

DISCUSSION

Dr. Howard Fox said that he believed the condition was a pigmented nevus of an unusual slate color.

Dr. Fordyce said that he agreed with Dr. Fox that it was a pigmented nevus of rather unusual color. A few days previously a man of 65 had come into his office with a somewhat similar pigmentation of both upper and lower eyelids. When asked about this discoloration, he said that he had had it for years; and when asked whether he had ever used argyrol he replied no, but that for forty years he had used an ointment which a Berlin physician had given him for sties. It was yellow mercuric oxid, and he had rubbed it on his eyelids to prevent the sties. The pigmentation was exceedingly definite and very disfiguring, but he said that the sties troubled him more than the pigmentation, and he would continue to use the ointment.

Dr. Bechet said he did not believe it was a nevus. If it were not for the history, he would strongly suspect that it was due to the application of some cosmetic. Its symmetry and its general appearance pointed to some external irritant rather than to an internal factor.

FOLLICULITIS ULERYTHEMA RETICULATA. Presented by Dr. Wise for Dr. Fordyce.

L. H., a boy, aged 10, American, for the last two years had noticed tiny papules, followed by seven closely aggregated, minute depressions in two large areas, one on each cheek.

DISCUSSION

Dr. Williams said that he believed the condition probably was more common than was realized. Many children had these few small atrophic spots on the face, but not a sufficient amount of scarring to call attention to it.

Dr. Wise said he did not agree with Dr. Williams. This was the fourth case of the kind reported in New York. It was an uncommon condition, a well defined, separate entity, and in no way related to the punctate scarring so often seen in association with acne vulgaris. The paper by MacKee and Parounagian described the condition fully.

MYCOSIS FUNGOIDES? ECZEMA SEBORRHEICUM? Presented by Dr. Wise for Dr. Fordyce.

A. S., a woman, aged 36, an Austrian, presented a condition which began as a small patch on the chest and spread to the trunk and legs. The duration of the condition was nine weeks. Examination revealed yellowish-pink ten cent to palm-sized patches over the affected areas, especially in the armpits and groins and under the breasts. Some of the lesions suggested pityriasis rosea. In addition to these patches, there was itching of the scalp and dandruff.

DISCUSSION

Dr. Fordyce said that he had two patients who apparently were cured by a combination of roentgen-ray treatment and arsphenamin given intravenously. One had remained well for more than five years; the other had had no recurrence during the last two years. In all of the cases treated by the roentgen ray alone, relapses had occurred.

Dr. Wise said that he would like to know whether it was the consensus of opinion that the case was one of mycosis fungoides. The histologic changes were not sufficiently marked to enable one to make a diagnosis of mycosis fungoides.

Dr. Fordyce said that the histologic data were not yet sufficient to enable any one to say that it was or was not a case of mycosis fungoides.

Dr. G. H. Fox said that one might make a diagnosis of mycosis fungoides in this case from the clinical appearance. He had photographs of the thighs of several patients which presented an almost similar appearance. One case had been presented to the Society many years ago—a patient with discrete disseminated erythematous patches all over the body. Dr. Morrow had seen the case in consultation and called it psoriasis. The erythematous patches were slightly scaly and pruritic, but tumors finally developed and the disease proved fatal.

Dr. Trimble said that he thought it was a case of premycosis fungoides.

A CASE FOR DIAGNOSIS: ULCERS OF THE PENIS. Presented by Dr. Howard Fox.

A. B., aged 44, a laborer, unmarried, born in Italy, whose family history was negative and who did not remember having suffered from any illness of importance, gave no history of venereal disease, and said that he had not had sexual intercourse for six months prior to the appearance of the eruption seven months ago. He first noticed a small, elevated, slightly reddened spot about the middle of the dorsal surface of the shaft of the penis. This occasioned little tenderness or pain. One month later this lesion was incised by a physician, but no pus was present. The site of the incision was soon converted into an ulcer, which healed in about four weeks under the local application of a salve said to be mercurial. Coincident with the healing of the original lesion, a second one appeared near it. This ulcerated rapidly and

enlarged to the size of a quarter and also healed in about one month under the same local treatment. The process of a new lesion appearing coincidentally with the healing of an ulcer had persisted to the present. The large ulcer now present was the sixth, and the small one the seventh to have appeared in seven months. There had been no buboes and no rash. The patient had not received any general antisyphilitic treatment, according to his statement, and the Wassermann test on two occasions was declared to have been negative.

Examination revealed one oval ulcer on the dorsum of the penis, about 1 inch (2.54 cm.) from the end of the prepuce, measuring 1 inch in its long diameter. The margins were slightly elevated and indurated. The base was clean and granulating, with a slight serous discharge. There was no undermining of the edges, or any punched out appearance, the edges being sloping. The borders did not present a waxy appearance. A second smaller ulcer of similar character was situated on the dorsal aspect of the penis near its root. There was no enlargement of the inguinal glands, and there were no scars of incisions or ulceration in this region. Scars on the penis of the ulcers which had already healed were moderately indurated and covered by thickened nonpliable skin. A partial phimosis was present. The patient was a medium sized, muscular man, in apparent good general health. He had been seen for the first time on the previous day.

DISCUSSION

Dr. Clark said he believed it was a gumma and that it would clear up under antisyphilitic treatment. He had had a case with a similar history in which almost the entire penis was involved. This healed under antisyphilitic treatment, although the Wassermann test was negative all the time.

Dr. Fordyce suggested that the question of tuberculosis be considered.

Dr. Highman said that he believed it was either tuberculosis or an unusual syphilitic infection, such as sporotrichosis.

Dr. Guy (Pittsburgh) suggested the possibility of a chancroid. Destructive ulceration, with auto-inoculation accounting for new lesions when old ones were about healed, would explain the local picture. The absence of bubo was against such a diagnosis, but was not conclusive.

Dr. Bechet said that Dr. Guy's suggestion might well be considered. He had recently read a French article on atypical chancroids, in which the description fitted the case under consideration. Dr. Oulmann had presented a patient before the Manhattan Dermatological Society with a lesion above the pubis almost similar to the one under discussion. The case was presented for diagnosis. The possibility of chancroid was mentioned; Ducrey's bacillus was subsequently demonstrated.

Dr. Howard Fox said that syphilis, tuberculosis, chancroid and some fungus infection had been considered, but that no diagnosis was possible until sufficient time had elapsed for a thorough study.

LUPUS PERNIO. Presented by Dr. Bechet.

R. S., a man, aged 26, a letter carrier, said that the lesion began on the lobule of the left ear two years before. In cold weather it was violaceous, swollen and edematous. It was covered with a few scales, and there was slight atrophy in its center. The borders of the lesion were sharply defined.

No other part of the face was affected. In warm weather the color faded out, and the infiltration subsided, leaving only a few crusts and slight atrophy.

DISCUSSION

Dr. Whitehouse said that he believed it was a necrotic granuloma or tuberculid. A few years ago, Dr. Whitehouse presented a patient with necrotizing chilblains with lesions of this character on the rims of both ears, which would appear every winter and disappear in summer, and which had caused a notched condition of the rims of the ears. This young man had pernio of the hands and fingers also, and was much benefited by injections of sterile emulsion of tubercle bacilli.

Dr. Trimble said he was inclined to consider it lupus vulgaris.

Dr. Bechet said that a point against the diagnosis of lupus vulgaris was the fact that the lesion practically cleared up in the summer, the patient stating that only scaling was present at that time of the year. When the cold weather began the lesion became swollen, edematous and violaceous. If it were lupus vulgaris, the lesion would not change with the seasons.

ADENOMA SEBACEUM TREATED BY DESICCATION.

A. C., aged 28, an elevator man, a negro of light color from the British West Indies, who appeared to be a man of average intelligence, applied for treatment three months previously for adenoma sebaceum of both cheeks, the eruption being limited in extent and the individual lesions being small. The eruption had been present since birth. The left cheek only had been treated by desiccation (Clarke) for the sake of comparison. Four treatments had been given, resulting in the practical disappearance of the lesions.

DISCUSSION

Dr. Clark said these cases usually responded to treatment with the Kromayer lamp.

Dr. Trimble told of a young girl with mild adenoma sebaceum which improved markedly under the Kromayer light.

KAPOSI'S SARCOMA. Presented by Dr. Wise.

J. A., aged 22, a train salesman, single, had a condition on the left heel which began a year and a half ago. The patient had numerous cystlike bodies on the dorsum of the foot, which might also be lesions of Kaposi's sarcoma, like that on the heel. He was referred by Dr. Mount of Albany.

Examination revealed a dollar sized tumor on the inner side of the left heel, composed of six closely aggregated nodules, pea-sized and larger, brownish or purplish, soft and tender. One inch (2.54 cm.) from the larger tumor there was a pea-sized tumor, warty in configuration. On the back of the same foot there were three soft, cystlike tumors, each about the size of a ten-cent piece, pinkish to normal in color. There were also similar lesions on the wrist.

DISCUSSION

Dr. Fordyce said that he believed the lesions on the back of the foot were connected with the veins. He suggested that the entire lesion be excised and examined histologically.

DR. HIGHMAN said that he believed the picture was that of Kaposi's sarcoma, and that the peculiar consistency of some of the lesions was due either to the cause mentioned by Dr. Fordyce or to a predominance of the angiomatous elements. He believed that all the lesions would have to be brought under one grouping.

URTICARIA PIGMENTOSA TREATED BY THE ROENTGEN RAY. Presented by DR. HOWARD FOX.

L. F., aged 44, a Jew, born in the United States, a printer, had suffered from an eruption for three and a half years. It was situated on the trunk, involving chiefly the lateral aspects, and to a less degree on the chest and back. It consisted of discrete, pinhead sized, brownish macules, which on friction became urticarial. Sometimes it was difficult to produce the wheals, while at other times they appeared on slight friction. He had been presented previously in 1921 by Dr. Wise (Arch. Dermat. & Syph. **3**:325 [March] 1921). According to his statement, he had been treated vigorously with quartz lamps, with only a temporary disappearance of the eruption. For the sake of comparison, one side (the right) of the trunk had been treated by the roentgen rays. A total of eleven treatments had been given from April 7 to Oct. 17, 1921, the dosage being one-half Holzknecht unit (skin distance) unfiltered. After six treatments had been given to the right side of the trunk, the eruption had largely disappeared, and at the time of presentation only a few lesions were visible.

CONGENITAL SYPHILIS. Presented by DR. HOWARD FOX.

A. M. D., a woman, aged 25, single, born in the United States of American parents, presented a classic example of saddle nose, frontal eminences, corneal opacities of both eyes, marked deafness and a "sabre tibia" of the left leg. At the age of 10, her second teeth were large, protruding and widely spaced. Later, they had been extracted. She was undersized, weighing 100 pounds (45.36 kg.), but she possessed average intelligence. She was able to read and write although she had not been able to attend school, and could make her own clothes and take care of the home. The eye symptoms were first noted at the age of 5 and the deafness at 15. She said that she had received antisyphilitic treatment at irregular intervals over a period of years, consisting of inunctions, internal medication, and a few arsphenamin injections. Several Wassermann tests had recently been negative. The patient's mother had had eight miscarriages, some of them self-induced. These were followed by one stillbirth and a live child who died "in convulsions" when 4 months old. The next child was the patient who was presented. Following her were two apparently healthy brothers, one of whom had recently been accepted for the United States Navy. The mother also showed characteristic scars on the site of an old nodular syphilid.

PSORIASIS FOLLOWING A LATE SYPHILID. Presented by DR. HOWARD FOX.

B. L., aged 51, married, a Roumanian Jewess, presented a horseshoe shaped patch on the anterior surface of the left leg, with sharply demarcated, festooned borders, spreading in a serpiginous manner, leaving some pigmentation but no discernible scarring. The patches were dry, scaly and moderately infil-

trated, but without any distinct lumpiness characteristic of a nodular syphilid. There was occasional slight itching. There was a slight pityriasis of the scalp, but no distinct psoriatic lesions other than the patch on the leg. The Wassermann test was negative.

PSEUDOPELADE OF BROCQ. Presented by DR. BECHET.

L. P., a man, aged 34, said that the lesions began twelve years previously. Since then new areas have appeared from time to time. He had never noticed any inflammatory symptoms, either before or after the occurrence of the bald areas. His scalp was covered with irregular, bald, atrophic areas, with here and there a reddened follicle. Some of the areas were cicatricial, others slightly atrophic, and still others as smooth as in alopecia areata. Brocq's description of pseudopelade exactly fitted the case. It was, however, in all probability, an atypical folliculitis decalvans. The two diseases were probably the same and not separate clinical entities.

SARCOID OF BOECK. Presented by DR. SCHWARTZ.

L. F., aged 44, a woman, married, appeared at the Cornell clinic on March 28, 1922, complaining of a facial eruption of two and a half years' duration. On the temporal regions and below the eye, there were about half a dozen lentil to large pea sized, round, slightly elevated, yellowish, scaly plaques. While she was under observation, new ones had appeared. They started as pinhead sized, yellowish lesions, which grew slowly. Microscopic examination revealed tuberculosis. The general examination was negative for tuberculosis, and the Wassermann test was negative. Guinea-pig inoculation was also negative. The crusted lesions were once treated with trichloracetic acid. Tuberculin had been used without effect.

A CASE FOR DIAGNOSIS. XANTHOMA? Presented by DR. WISE for DR. FORDYCE.

M. F., a boy, aged 20 months, presented disseminated lesions on the face and extremities, resembling xanthoma. The duration of the condition was ten months. The lesions were firm, nodular and flattened, ranging from pinkish to deep red, some level with the skin and others elevated.

EPIDERMOLYSIS BULLOSA. Presented by DR. WISE for DR. FORDYCE.

A. C., a boy, aged 4½ years, presented lesions which had been present since birth. The mother gave no history of a similar condition in the family, either direct or collateral. There were three older children in the family, perfectly normal. The patient was a full term child, and there was nothing unusual in the mother's pregnancy or confinement. At birth, it was noticed that the patient's feet were denuded of epidermis, and that they appeared raw and livid. The child was a bottle fed baby. Other than slight intestinal derangement, and pneumonia, with recovery in nine days, one year ago, the history was entirely negative. The teething of the child was somewhat abnormal, his back teeth having preceded his front teeth. Examination revealed an anemic child, who was mentally alert. His entire scalp was covered with a slightly yellowish crust. The eruption was chiefly confined to the extremities, although some lesions were present on the trunk and in the mouth. The lesions consisted of bullae up to 1 inch (2.54 cm.) in diameter, a few of which were

intact, but the remainder denuded of epidermis. There were some pigmented areas at the sites of healed bullae. There were also numerous pinhead epidermal cysts, most pronounced on the ears, but also present elsewhere. The nails of the fingers and toes were absent, and were lost at the age of 10 months. There was moderate contracture of the hands and fingers, due to atrophy. The hairs were intact. The lesions itched intensely, and the child scratched continuously. At the sites of injury, or scratching, new lesions appeared.

GRANULOMA ANNULARE. Presented by Dr. Wise.

A. H., a boy, aged 4 years, American, presented lesions of one year's duration, confined to the hands and wrists, and giving the appearance of an incomplete circle about 1½ inches (3.81 cm.) in diameter. The center of the lesions was clear. Each lesion was in the form of a border which varied from one fourth to one third of an inch (6.35 to 8.46 cm.) in width, surrounding normal skin. They were pinkish and felt somewhat infiltrated, the outer edge being raised one sixteenth of an inch (1.58 mm.) from the surface. No scaling was present, but there was lichenification with a few outlying papules. On the right wrist was a circular lesion half an inch (1.27 cm.) in diameter, with a raised border and healing center, the color of which varied little from that of the normal skin.

MANHATTAN DERMATOLOGICAL SOCIETY

Regular Meeting, Nov. 14, 1922

H. J. F. Wallhauser, M.D., *Presiding*

EPIDERMOLYSIS BULLOSA. Presented by Dr. Isidore Rosen.

H. N., 3 months old, developed bullous lesions immediately after birth, especially on the hands and feet. The lesions came and went, leaving slight pigmented discolorations in the skin. Examination on the day of admission to the clinic revealed a fairly well nourished child, with bullae of varying size, from that of a split pea to that of a small hazelnut. These lesions were filled with serum, and some of them were slightly hemorrhagic. The lesions were more marked on the hands and feet, but small vesicles and bullae were present on the trunk. The tongue was slightly ulcerated as a result of ruptured vesicles. Slight ulcerations were also seen on the inner surfaces of the cheeks. Syphilis was ruled out, on account of both the negative history and the serologic examination.

DISCUSSION

All agreed with the diagnosis.

MONILETHRIX. Presented by Dr. Max Scheer.

E. S., a boy, aged 10 years, presented on the occipital region, twisted, dry hairs, moderate alopecia and keratoses imparting a nutmeg grater feeling. Microscopic examination revealed beading of the hairs. The father and two paternal uncles were said to have the same anomaly.

DISCUSSION

All agreed with the diagnosis.

LARVA MIGRANS. Presented by Dr. O. L. Levin.

M. McG., a woman, aged 21, single, a stenographer, had had lesions on the neck for thirteen months. This first appeared after a visit to a farm in Connecticut. The lesions began as small red spots which enlarged centrifugally, varying in size from that of a twenty-five cent piece to that of a silver dollar, made up of a linear border, slightly elevated, dark red and about one-sixteenth inch (1.58 mm.) wide. Within this border the skin was slightly scaly or normal, the border gradually faded and the enclosed area became white, showing a loss of pigment. As presented, the patient showed several large areas of achromia and several linear serpiginous and circinate lesions suggestive of larva migrans. The Wassermann test was negative. Examination for spores and mycelia and larvae was negative. The case was presented for diagnosis.

DISCUSSION

Dr. Wise said that he believed the diagnosis of creeping disease was the most probable one.

Dr. Bechet agreed with the diagnosis of creeping eruption.

Dr. Gilmour said that he was sure this leukoderma was related to the moving forward of the lesions. The patient had several of these serpiginous eruptions followed by a loss of pigment behind the advancing border. This he confirmed at the clinic when the patient was studied with better illumination.

Dr. Fox said that he believed the waxy border of the patch bore some resemblance to a larva migrans. This, however, could not have caused the depigmented area as that had been produced by centrifugal extension.

Dr. Levin said that the lesions presented none of the charcteristics of morphea, but simply presented inflammatory, linear, centrifugally spreading borders and areas of vitiligo.

KRAUROSIS VULVAE WITH EPITHELIOMA OF THE VULVA. Presented by Dr. Max Scheer.

L. K., aged 78 years, complained of itching of the vulva, which she had had for many years. Six months ago she noticed a sore on the vulva. There was marked atrophy of the vulva; the labia majora and minora had fused together forming an atrophic shrunken tissue. The mucosa was also atrophic and showed grayish-white areas. On the upper third of the right labium was a ten-cent sized ulcer with a pearly border of firm consistence. The patient refused excision.

DISCUSSION

All agreed with the diagnosis.

NEURODERMATITIS. Presented by Dr. Fred Wise.

A. L., a woman, aged 29, single, was presented largely on account of her previous history. She had had a generalized itching eruption for the last three years. She was confined to bed for seven weeks last summer with exfoliative dermatitis, and at that time was under the care of Dr. Wende of Buffalo. Intradermal tests showed hypersensitiveness to milk protein. The eruption was aggravated by a milk diet and had improved since she stopped drinking milk. At present she shows lichenification of the back of the neck and bends of the elbows and knees, with slight erythema of the scalp and face,

where the skin is dry, wrinkled and pigmented, possibly from the roentgen-ray treatment she has received. A zosteriform leukoderma appeared on the right shoulder and arm after the attack of exfoliative dermatitis last summer. The condition was possibly Duhring's disease at first, but now the picture agrees with that of neurodermatitis.

DISCUSSION

DR. FOX said he was not aware that the so-called neurodermatitis was associated with asthma or hay-fever. There had long been a prevalent idea that ordinary eczema was closely associated or frequently alternated with attacks of asthma or hay-fever. In an attempt to obtain information on this subject, he had made a note in every case of eczema during the past four years concerning this alleged relationship. His records showed that this was notably absent in the vast majority of cases.

A CASE FOR DIAGNOSIS. LUPUS ERYTHEMATOSUS DISSEMINATUS (?). Presented by DR. HOWARD FOX.

S. J., aged 32 years, a domestic, single, born in the United States, was a full-blooded negress. There was no family history of tuberculosis. The patient said that in the early part of May, 1922, both ears became bluish, swollen, moist and painful, and that they bled easily on traumatism. At the end of two weeks, the inflammation gradually began to subside, the entire surface of both ears becoming scaly and very dark. There was also marked itching at this time. A few days after the eruption appeared on the ears, she noticed sharply demarcated patches beneath the eyes, extending to the molar prominences. These patches were less inflamed than the ears, but itching was marked and scaling was said to be present. There were a few scattered lesions on the forearms in June. Until September 15, new lesions appeared on other regions. All of the eruptions had been accompanied by itching, especially in hot weather. The pigmentation of the ears was now said to be slowly becoming less marked. There had been a partial loss of the hair six months previously, most marked in pigmented patches in the occipital region. At the onset of the disease, the patient weighed 160 pounds (72.57 kg.), since which time she had gradually lost 20 pounds (9.07 kg.). She complained of having felt "feverish" for a long time and that she had an abnormal thirst and became easily tired. There had been no cough, night sweats or hemophysis. At the time of onset of the eruption, her family physician had noticed an enlarged gland the size of a walnut in the cervical region. Wassermann tests taken at Bellevue Hospital in May and June were said to have been negative. Two weeks previously she had developed pain in the left side of the chest, and at the Harlem Hospital a diagnosis of pleurisy had been made.

On examination, the entire surfaces of both ears, except the lobe of the right ear and the mastoid regions presented a marked brownish pigmentation. On each malar region were irregularly shaped areas of pigmentation about 1 inch (2.54 cm.) in diameter, in the neighborhood of which were several pea to dime-sized concrete areas of similar character. Other areas of pigmentation were noted on the neck, forearms and right deltoid region. In the interscapular region and on the chest were palm-sized areas of pigmentation, which also showed closely massed small pea-sized round, superficial scales. The patches were slightly infiltrated and dry and showed no scratch marks. In the

left anterior cervical chain of lymphatics was a large walnut-sized gland that was firm, painless and freely movable. Other pea-sized glands in this chain were palpable. The posterior cervical, deep cervical and submaxillary glands could also be palpated. The right epitrochlear gland was bean-sized. Subsequent physical and roentgen-ray examination of the chest failed to reveal evidence of pulmonary tuberculosis.

DISCUSSION

DR. LEVIN said that the lesions and papules in this case differed from those in the case previously presented by Dr. Scheer, in that this case presented or showed distinct papules as well as the pigmentation. It was difficult to make a positive diagnosis, but in his mind the presence of the shiny papules and the old pigmentation suggested lichen planus.

RECURRENT ERYTHEMA NODOSUM. Presented by DR. ANDREW J. GILMOUR.

F. S., a woman, aged 39, married, born in the United States, a housewife, whose family history was negative, and whose general health had always been good, gave an indefinite history of rheumatism in the left wrist eight years before. During 1899, 1905, 1909 and 1913, the patient had had attacks similar to the present one. All occurred in the left leg near the ankle. The lesions were tender and lasted about two and a half months. The present history is that four weeks ago, on the center and back side of the lower part of the right leg, there appeared four raised red spots with more or less edema. In the middle of August, they became so acutely red and painful that the patient had to go to bed for a few days. When the patient was on her feet much the lesions became more acutely red and throbbed. This condition was relieved by resting the limb and keeping it in a raised position. On Sept. 3, 1922, when first seen, there were two raised red, tender lumps the size of a small hen's egg; one was situated on the outer side of the lower third of the right leg, the second on the middle third of the leg near the median line of the back of the leg. This was quite tender. These changed somewhat, depending on how much the patient was on her feet. The Wassermann test and examination of the urine were negative. No point of focal infection was found.

DISCUSSION

DR. WISE said that he recently had a case of erythema nodosum, which cleared up almost immediately after tonsillectomy.

DR. FOX asked the members concerning their experience with recurrences in erythema nodosum.

CASE FOR DIAGNOSIS: FOLLICULITIS AND ALOPECIA CICATRISATA. Presented by DR. PAUL BECHET.

S. R., a boy, aged 15, born in the United States, said that the eruption began about ten years previously. He presented for examination several small semi-bald areas over the occiput, with some folliculitis. On the hairline, from the back of the left ear to the back of the right ear, and over the forehead, was one continuous line of folliculitis, which had apparently spread from the periphery to the center, so that over the forehead and back of the ears the hairline had markedly receded. The parts denuded of hair were

superficially cicatricial. There were minute follicular cicatrices and loss of hair on the outer third of the eyebrows, closely resembling an ulerythema ophryogenes.

DISCUSSION

DR. WISE said that he agreed with the diagnosis. He said that so far as he was concerned, this was the first time he had seen a case of this kind in which the lesions began at the hairline and spread centrally. He said that if he had seen the lesions on the back of the scalp alone, he would have diagnosed the case as folliculitis decalvans.

NEVUS PIGMENTOSUS ZOSTER-LIKE IN DISTRIBUTION. Presented by DR. O. L. LEVIN.

P. D., a man, aged 21, single, a cashier, had had a mole on the lower part of the right side of the abdomen since birth. Three years before pigmentation occurred on the lower part of the right side of the abdomen and back, and this pigmentation had persisted. This gave no evidence of any local application or any other disturbance. The patient presented in the lower part of the right side of the abdomen a twenty-five cent piece sized oval, dark brown, elevated growth. This was in the midst of a brownish pigmentation which covered the lower part of the right side of the abdomen from the midline in front and extended around the side to the back, where it was present as far as the spinal column. There were no scales or elevation.

A CASE PRESENTED FOR DIAGNOSIS. Presented by DR. PAROUNAGIAN.

Mrs. Mary B., aged 57, born in the United States, married twice, the first time about thirty years ago, had had three miscarriages within eighteen months. She had been divorced and remarried six years ago. She had not been pregnant by this husband. The patient had trouble with the larynx, accompanied by spells of coughing. A tracheotomy had been performed. The blood Wassermann test was four plus; the husband also had a positive Wassermann reaction. The patient was referred to us for treatment. While with us she presented lesions on the forearms and lower extremities of papulocircinate character, a clear center, slightly raised, without pruritus. The eruption was symmetrical; it faded and reappeared, apparently without relation to treatment, as it was marked at the last presentation before this society. No treatment has been given since June 19, 1922, and the eruption is much fainter than at that time.

The total treatment during the last two years has consisted of ninteen arsphenamin, three silver-arsphenamin and thirty mercuric salicylate injections. The last Wassermann test, made July 11, 1922, was negative. There was a trace of albumin in the urine.

DISCUSSION

DR. LEVIN said that he believed this was a case of parapsoriasis. Especially characteristic was the presence of the pin-point to pinhead sized shiny, lichen planus-like papules on the forearms near the bends of the elbows. The only unusual feature was the presence of the lesions on the extremities alone. The only other diagnosis which he had considered was the telangiectasia occurring occasionally in syphilis.

DR. WISE said that a biopsy was made and that he believed it would be advisable to make another. He was not sure that this was parapsoriasis.

A CASE PRESENTED FOR DIAGNOSIS (POSSIBLE COLLOID DEGENERATION OF THE SKIN). Presented by DR. MAX SCHEER.

M. A., a man, aged 28, single, born in Austria, noticed the lesions one year ago. On each side of the neck were about a dozen growths, from ⅛ to ¼ inch (3.17 to 6.35 mm.) in diameter and slightly raised above the skin level. They were lemon yellow and moved freely on the deeper parts, but were partially attached to the overlying skin. Subjective symptoms were absent. On puncture, a small firm yellow-white body was extruded. There were similar lesions in both groins. They had not changed in size or number since first seen by the patient.

DISCUSSION

DR. FOX said that he believed the lesions were ordinary sebaceous cysts.

DR. WISE said that he agreed with Dr. Fox. He diagnosed the condition as being probably multiple sebaceous cysts.

DR. LEVIN said that all lesions were sebaceous cysts. In colloid degeneration of the skin we do not find lesions which can be entirely enucleated. He said that he believed the lesions resembled those which were calcified and usually occurred in the scrotum.

MULTIPLE LIPOMAS. Presented by DR. GILMOUR.

D. B., a man, aged 40, a Russian Jew, a manual machine operator, whose past history was negative, came to the clinic for treatment of a seborrhea of the scalp of fourteen months' duration. Examination revealed that on both forearms there were several characteristic lobulated swellings, varying in size from that of a robin's egg to that of a small hen's egg.

GUMMAS OF THE EAR REGION. Presented by DR. A. J. GILMOUR.

S. M., a man, aged 22, single, Irish, about Jan. 12, 1921, discovered a sore on the penis. A diagnosis of syphilis was confirmed, and treatment was started at once. Between this time and Aug. 25, 1922, the patient received nineteen injections of arsphenamin and twenty-four injections of mercuric salicylate. At this date, about one month after the last injection, the Wassermann and spinal fluid tests were negative. About October 6, a small swelling appeared just behind and another just in front of the right ear. These were at first thought to be boils. When seen on October 28, the two characteristic gummas were found, with the long diameter vertical and about ¾ by ½ inch (19.05 by 12.7 mm.) in size. Treatment was started at once. Following treatment with arsphenamin, mercuric salicylate and mercurial ointment (10 per cent.), the lesions improved wonderfully and they were now almost well. The case was presented because of the appearance of gummas so soon after the treatment and a negative blood and spinal fluid test.

VARICELLIFORM SYPHILIS. Presented by DR. PAROUNAGIAN.

J. F., born in the United States, aged 25, married, had urethritis about six months previously; he denied chancre, and no evidence of this was present. The patient had been exposed to the one woman only for ten months. The woman was examined and was found to be clinically free from syphilitic lesions. The patient had a patch on the left tonsil and an eruption closely resembling varicella distributed over the forehead, trunk, anterior and posterior, and

the extremities. There was a moderate glandular enlargement, and he had had pain in the legs for some time. The eruption had been present for about three weeks.

SECONDARY SYPHILIS, ALOPECIA, LEUKODERMA COLII, SCABIES, ETC. Presented by DR. PAROUNAGIAN.

N. T., an Italian, aged 20, presented himself at the clinic on July 11, 1922, with a frenal sore of eleven days' duration. He had been exposed one month and one week previously. There were no other clinical signs of syphilis, but a diagnosis of scabies could be made clinically. Dark-field examination and the Wassermann test were negative. The patient did not return to the clinic until Nov. 9, 1922, at which time he had alopecia luetica, condylomas and leukoderma colii of about four weeks' duration. The patient was shown because he presented leukoderma colii in a male, associated with other cutaneous evidences of generalized syphilis plus scabies.

ANAL CHANCRE AND SECONDARY SYPHILIS. Presented by DR. PAROUNAGIAN.

A. A., an Italian, aged 21, admitted malpractice (anal osculation) by a girl friend about two months ago. There had been little rectal distress, a generalized skin eruption and mucous patches, headache and pain in the limbs and chest for about three weeks. Dark-field examination of the remains of the chancre was negative.

GUMMA OF THE STERNUM. Presented by DR. PAROUNAGIAN.

J. P., an Italian, aged 40, denied all knowledge of venereal disease or syphilis. The patient said that the lesion on the sternum had been present for only one month. The patient was troubled with a cough, but the sputum has not been examined or a roentgen-ray examination made of the chest. The Wassermann reaction reported on November 9, 1922, was four plus. He was given two injections of neo-arsphenamin, and reported marked improvement.

SATENSTEIN, Secretary.

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